

THE  
**SOUTHERN AGRICULTURIST.**

NOVEMBER, 1838.

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**PART I.**  
**EDITORIAL AND ORIGINAL.**

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*Louisville, Cincinnati and Charleston Rail-Road.*

The Second Report of the Directors of the Louisville, Cincinnati and Charleston Rail-Road to the Stockholders, is before the public, but to keep this mighty enterprise as much as possible under the notice of our planters and farmers, who are as much interested at least as any one, other class of our people, and to show how important such a road is considered out of our own State, we transfer to our pages such portions of it as we think pertinent to our object, and also, part of the report made by the Committee of FORTY-FIVE, to the Knoxville Convention. It will be observed *nine* States were represented, and that the Convention numbered no fewer than *three hundred and eighty* members. But let their doings speak for themselves.

*Proceedings of the Knoxville Convention, in relation to a Rail-Road from Louisville and Cincinnati, on the Ohio, to Charleston, South-Carolina.*

The Convention met in the Methodist Church, at Knoxville, on the 4th July, 1836.

Delegates attended from nine States, viz., Ohio, Kentucky, Indiana, Tennessee, Virginia, Alabama, North-Carolina, South-Carolina, and Georgia. The whole number of members present were 380.

The Convention was organized by the unanimous appointment of Gen. Robert Y. Hayne, of South-Carolina,

to be President, and the Hon. Pryor Lea, of Tennessee, to be Secretary.

After sitting from day to day until the eighth, and transacting much other business, the following PREAMBLE and RESOLUTIONS, being the REPORT of a Committee of 45, composed of delegates from all the States interested, were UNANIMOUSLY AGREED TO by the whole Convention, and ordered to be published to the world in their name and behalf.

#### REPORT OF THE COMMITTEE OF FORTY-FIVE.

The committee to whom was referred the report of the South-Carolina Commissioners, and the four Resolutions directing them to consider *the charters* and report thereon, and also to inquire and report on the *practicability, probable cost, and commercial and other advantages* of the proposed Louisville, Cincinnati and Charleston Rail-Road, and also on the *measures necessary to be adopted* in relation thereto, have had these important subjects under consideration, and find, that charters have been passed by the Legislatures of South-Carolina, North-Carolina, Tennessee and Kentucky, for the purpose of extending a Rail-Road from Louisville and Cincinnati to Charleston, through the States above-mentioned. Having examined the provisions of these charters, the committee are of opinion *that they should be accepted*, and accordingly report a resolution to that effect.

With respect to the second branch of their inquiries, they report that the charters enacted by the several States require, that the road shall pass through the States of Kentucky, Tennessee, North-Carolina and South-Carolina; and the committee are directed to respond to the inquiry, whether there has been found a practicable route through these States between Charleston, in South-Carolina, and some point in Kentucky, between the Cumberland Mountains and the Kentucky river, from which point two roads may be made, one leading to Louisville, and the other to Cincinnati by way of Lexington, and thence by a branch to Maysville. This cannot be answered better than by referring to the report of Capt. Williams, of the U. S. Topographical Engineers, and Chief Engineer of the South-Carolina Commissioners, which has been referred to this committee, and which, after due examination, is found to be entitled to entire con-

fidence, as well on account of the able manner in which it has been drawn up, as the skill and accuracy of the Engineers who have assisted in making the surveys. From this report, corroborated by the personal observations of many members of this committee, it will appear that within the chartered limits of this company, there is no practicable pass through the Alleghany Mountains, but the valley of the French Broad river; and most fortunately for the undertaking, the general direction of this river, within the mountain region, coincides with the straight line drawn from Charleston to the branching point in Kentucky; and what recommends it more strongly for adoption, is the fact, that its head waters rise on a level plain, which begins at the summit of the Blue Ridge, and stretches to the North-West in an open valley, without any descent perceptible to the eye for 30 miles, to a short distance below Ashville in North-Carolina; and for the next sixty miles it has a very regular descent to the point where it issues from the mountains, which descent in the whole distance averages only 13 feet to the mile; and in only one mile is there a descent of 45 feet. And while the river runs over this regular, descending bed, its curvatures are such, that with no very extraordinary labor, a road can be made in it, to admit locomotives with their trains to pass without difficulty. This committee have no hesitation, therefore, in declaring that this must be adopted as a part of the line of our road, and that it is perfectly practicable.

A view of the extent and population of the States granting the charter, (through which it must pass) and also of those States, which lying contiguous on the East, the North and the West, may unite themselves with it, by lateral and other connecting Rail-Roads, Canals, and navigable Rivers, may aid in demonstrating the value and extent of the commercial and social intercourse it may be made to establish. But the limited time allowed the committee, have prevented them from descending to particulars, or exhibiting more than a general survey of this extensive region. It will be seen that the most direct influence of our road will embrace the Eastern but largest portion of Kentucky, the whole of East Tennessee, the Western section of North-Carolina, and the entire State of South-Carolina. In this region, taking the census of 1830 as the basis, and adding the supposed increase to

this day, the present population will not vary much from two millions, or a little less than the entire population of the United States at the declaration of Independence. And before the time limited for the completion of our work by the charter, allowing our population to double in 30 years, which this road will probably help to accomplish, it will, no doubt, exceed that number, and nearly equal the entire population of the States at the adoption of the Federal Constitution.

But a more enlarged view of this matter must be taken. The connections with our road, as exhibited hereafter, will shew that the whole region to be intimately united with our work, will embrace the entire State of Georgia and a part of Florida, the Eastern part of Alabama, the Southern part of North-Carolina extending Eastward to the ocean, a large portion of Ohio on the South and West, almost the entire State of Indiana, and a part of Eastern Illinois. Adding these extensive regions, and it will be seen at least one third of the United States, which is now settled, forms the immense country from which this road will draw its support, and to which it will dispense its blessings. And it cannot be doubted that by the time it is completed, the circle of its influence will embrace more than 5,000,000 of people, inhabiting a country, which stretches over at least 12 degrees of latitude, and 10 degrees of longitude, and is blessed by every variety of soil, production and climate, found in any part of this Union.

This view of the subject would seem to render almost unnecessary any further development of the extensive usefulness and vast importance of the undertaking."

Unanimity among so large a body, speaks volumes in favor of this, the boldest enterprise of our (or any other) age, and should make its opponents, at least distrust their judgments. The deep interest this State has in it, should convince them all opposition is idle, if not unpatriotic. The State, her Cities, her Banks, and her People, have **MILLIONS** involved in the fate of this magnificent undertaking, and in spite of all difficulties, the work must go forward—the design must be carried out to completion. Perfect, this bond of union between the South and the West—and we may laugh the Northern abolitionists to scorn—splendid cities will grow up along its whole course—and our own Charleston, unmindful of recent disaster, and



shaking off present thralldom to her more fortunate sister cities of the North, will rise in proud and successful competition with the most favored among them. If a good beginning is ever the earnest of a good ending, then in the successful prosecution of the enterprise up to this time, we have the guaranty of its eventual consummation. The Company have not been successful at home only, but abroad also. Gen. Hamilton was charged with the negotiation in London for two loans of \$1,000,000 each, guaranteed by this State, and we are gratified in being able to state he has effected them on terms very favorable to the Company. They are, we understand, 5 per ct. interest, and 26 years credit. Of this sum, one half of the first loan is in specie, which will enable the Bank to commence operations under the most promising auspices. For other proceedings in furtherance of this gigantic project, we refer our readers to the following extracts, &c., from the Report to the Stockholders.

Referring to the purchase of the Charleston and Hamburg Rail-Road, at 25 per cent. on the original cost, the report says—"The sum agreed to be paid for this road does not exceed its actual cost to the Stockholders, or its value to us. By this purchase we have secured a Road, **READY MADE TO OUR HANDS**—136 miles in length, extending from Charleston to Hamburg, on the Savannah river—opposite to Augusta in Georgia, where it meets the Athens Rail-Road, through which it will finally be connected with all the improvements now going on in Georgia and Alabama, and thus command to a very great extent the trade of the South and South-West."

The report gives the details of a route by which a traveler from this city may reach Boston in less than four days—from Augusta (Ga.) to New-York, (800 miles) in four days—and it is shown, that when certain roads in Georgia and Alabama shall be completed, the distance between even New-Orleans and Boston, may be traveled in less than a week.

The Stockholders in the road, having decided banking privileges were indispensable, the report states liberal charters had been granted by the States of North and South-Carolina, and proceeds to say: "These, however, had been granted on the express condition that **THREE STATES** should concur therein, *and*, that the subscription to the Road should be increased to eight millions of dol-

lars, on or before the 31st of December, 1837. At the meeting of the Stockholders in October last, the whole subscription amounted to about \$5,300,000 ; and in order to secure the Bank Charter, it was necessary that either Tennessee or Kentucky should be induced to concur in the grant, which had been made by the two Carolinas, and *also*, that \$2,700,000 should be added to the subscription before the end of December. The President having repaired to Nashville, obtained the consent of the Legislature of Tennessee to the Bank Charter, (though the application to Kentucky unfortunately failed,) and also procured a subscription on the part of the State of Tennessee to the amount of \$650,000. But still upwards of *Two Millions* of dollars remained to be subscribed in the short space of three weeks, which could not possibly have been obtained in any other way than by the purchase of the Charleston and Hamburg Rail Road, which was made on the condition that a subscription should be made in behalf of the Stockholders in that Company, for 20,000 shares in our Company, the first payment on which was to be deducted from the purchase money. This left a deficiency of only \$50,000 ; which was promptly, and liberally made up by the City Council of Charleston ; and THE BANK CHARTER WAS THUS SECURED ; which confers upon the Company privileges of such inestimable value, that no doubt can be entertained that under a judicious management they may be made to yield full dividends, on the whole investment both in the Road and the Bank,—furnishing at the same time the means for making the Road.” “ But these were not the only advantages to be secured by the purchase of the Charleston Rail-Road. That Company enjoyed the exclusive privilege of making a Rail-Road from Charleston to Columbia, and difficulties were apprehended in the attempt to form a junction with them. To obviate all of these difficulties—to secure to ourselves the valuable privileges of the Charleston Company, and at the same time to obtain possession of a Road already made, and not only valuable in itself, but especially valuable to us, as furnishing for upwards of sixty miles from the sea-board, a Rail-way of which we could avail ourselves in the extension of our Road through the centre of South-Carolina, thus forming the first great link in the proposed connection between the South and the West,—were objects of the last impor-

tance. Availing ourselves of these advantages, the Board of Directors have, since the purchase, caused the Road to be located (in the construction of which great progress has been already made) from Branchville (a point on the Charleston Road, 60 miles from that city) to Columbia, the Capital of South-Carolina, from which place it is proposed to extend our MAIN TRUNK, through the centre of South-Carolina, across the Butt Mountain Gap in North-Carolina, and thence along the valley of the French Broad river, to Knoxville, (Ten.) from whence it will be carried to Lexington, Kentucky, and eventually, we trust, to the Ohio and Mississippi rivers,—by as many routes as the interests and the convenience of the people of the Western States may require. Though several routes have been surveyed between Columbia and the Mountains, and also between Knoxville and Lexington, all of which have been found entirely practicable; it has not been deemed proper to proceed to the *location* of any part of the Road above Columbia. \* \* When one section of the Road shall be finished, and brought into successful operation, a sure foundation will be laid, for the construction of the next, and thus we shall advance step by step, and as rapidly as our means may permit, to the final consummation of our work, securing as we progress, the fruits of our enterprise. \* At every stage in our progress, however, let our eyes be constantly fixed on this extension, as the consummation of our great work. Let us never forget that to bring the South and the West together, is the end at which we aim, and while proceeding gradually, let us advance steadily towards that object. \* We do not wish to be understood by any thing we have here said, as intending to discourage the commencement of the work, in any of the other States, at points where there may be sufficient reason to believe, it can be completed within a reasonable time, and where, when finished, it can be rendered useful and profitable of itself. These are points that must be left to the judgment of the Directors and Stockholders in each State."

"In looking to our resources for carrying on this work, it should be borne in mind, that the purchase of the Charleston and Hamburg Rail-Road, must necessarily consume a large portion of our funds for some time to come;—and if at the expiration of one or two years, from the commencement of the enterprise, we shall have

accomplished no more than to have paid for that Road, and constructed our main stem to Columbia, more will then have been effected, than has ever been performed in this or any other country, by any single company in the same space of time. We shall then be in possession of a Rail Road *two hundred miles in extent*, twice as long as any single Rail Road now existing in the world, and which will have been completed in half the time usually occupied in such works. To accomplish this however, will require the exertion of our best energies."

"It has been shown, that the price of the Charleston Rail-Road, was \$2,400,000, of which \$1,600,000, will have become due by the 1st of January next. In addition to this, the completion of the repairs and improvements on that Road, including the embankment and new iron, repairs of Engines, Cars, &c., may be estimated at about \$300,000. The construction of the Branch at Columbia, on the most approved plan, will cost (as estimated by the chief Engineer,) \$1,500,000, making in the whole \$4,200,000, for a considerable portion of which provision must be made in the course of the ensuing year."

The report here refers to negotiations for loans then pending, and states the Company will have at their disposal the following means, to meet engagements, and carry on the work, viz.:

"Amount of the 1st loan,	-	-	\$1,000,000
Balance of cash on hand, (According to the			
Treasurer's Report)	-	-	150,000
Making together the sum of			<hr/> \$1,150,000 <hr/>

"This sum will be applicable in the first place, to the payment of \$350,000, due to the Banks in Charleston, being one half of the amount borrowed from them, to meet the cash payment on the purchase of the Charleston Rail-Road. There will also be required to meet the contracts for the construction of the Road between Branchville and Columbia, and the other current expenses of the Company, up to the 1st January next, about \$100,000, to which about \$80,000 may be added for carrying on the repairs and improvements on the Charleston Road, the surveys, &c., up to the same period, making in the whole \$530,000; which being deducted from



the means at our disposal as above, would leave a balance *on the 1st of January next*, of \$620,000, which would be applicable to the payment of the 2d instalment of \$800,000, (with interest on the whole debt) which will on that day become due to the Stockholders of the Charleston and Hamburg Rail-Road Company, amounting in the whole to about \$900,000. It will be perceived then, that there will be a deficiency of near 300,000, of the amount necessary to meet our engagements on the 1st of January. This amount can only be supplied by calling for another instalment on the Stock, or by making a temporary loan, until the 2d million can be obtained from Europe. The money cannot be obtained according to the terms of the Act of the South-Carolina Legislature, until another instalment shall be called in from the Stockholders. This may be safely done in the spring of the next year, provided the Bank can in the mean time be put in operation. It is not believed, that it would be expedient to make any further calls upon the Stockholders until, by the establishment of the Bank, a fixed value shall be given to their Stock. A temporary loan, therefore, to meet the demands upon the Company, which will become due on the 1st of January next, seems to be the best expedient that can be devised. We can offer as security for such a loan *ten thousand Shares* in the Charleston and Hamburg Rail-Road, whose par value is ONE MILLION OF DOLLARS, which Shares are now pledged to secure the payment of the \$800,000, due in January next, but which will be released on the payment as above proposed of that sum, with the interest on the debt. It may be hoped that no serious difficulties will be experienced in effecting a loan of so much money, as we may require, say \$500,000, on this unquestionable security, and if so,—we shall have on the 1st of January next, a balance of \$200,000, after paying all demands and which will be applicable to the general purposes of the Company. In extending our views still further, to the entire operations for the ensuing year, it will be found indispensably necessary that an instalment of \$5 on each Share should be called for early in the course of that year. This we may assume to amount to

	-	-	-	-	\$300,000
The 2d loan which may then be effected, will					
amount to	-	-	-	-	1,000,000

Making together, -	-	\$1,300,000
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Amount brought over,	\$1,300,000
The balance of the debt now due to the Bank must be paid, say	\$350,000
The temporary loan above mention- ed, must also be paid, say	500,000
Making together,	<u>\$850,000—850,000</u>
Which deducted from the above would leave a balance on hand of	<u>\$450,000</u>

“On these payments being thus made, we shall moreover be left in possession of ten thousand Shares in the Charleston Rail Road Company, worth at least a million of dollars free from all encumbrance, which, with such additional instalments as may be called for from the Stockholders, will constitute the means for carrying on the work,—and would be adequate to that object. When the repairs and improvements on the Charleston Road, shall be completed, we may reasonably expect to derive an income, from that source, but this must of course be divided among the Stockholders, and cannot be diverted to any other objects. It may not be necessary at present, to look to any other resource, than the additional 10,000 Shares, mortgaged to the Stockholders of the Charleston Rail-Road Company, to obtain the means of paying the 3d instalment, which will become due on the 1st of January, 1840. But to carry on the work to the extent proposed, so as to finish the Road to Columbia, early in 1840, will require a call for two or more instalments in the course of the ensuing year. Should our Bank, however, go into successful operation, no difficulty need be apprehended, from making the necessary calls—especially when the amounts called for, will be applied to securing a valuable Rail-Road property, to be put to immediate and profitable use, and from which dividends may be soon expected.

“We consider the establishment of the RAIL-ROAD BANK, as THE BOND which will serve to hold the Company together, and afford a certain resource in every time of need, and therefore as essential to the success of our great work. In this view of the subject, we would call the attention of the Stockholders to some of the leading provisions of our Bank Charter, and briefly point out

the great advantages that may be derived from this Institution, and the valuable uses to which it may be applied. The "SOUTH-WESTERN RAIL-ROAD BANK" has been chartered by the States of North and South-Carolina, and Tennessee, with a capital not to exceed *twelve millions of dollars*, and for a period of *thirty-one years*. Kentucky has not yet concurred in this charter, but strong hopes are entertained that the renewed application which is to be made to her Legislature, at the ensuing session, will not fail of success. We are strengthened in this expectation by the favorable disposition manifested towards our enterprise, at a recent meeting of the Directors in Lexington,—by the small majority against the application at the last session of only six votes,—by the deep interest which Kentucky has in the success of the Road,—and especially in the establishment of a Bank, which will so essentially promote the trade and intercourse now carried on by her citizens, with the Southern States. But whether these expectations shall be realized, or not, it cannot be doubted that a bank, extending with its branches over three States, will furnish a currency which must be of inestimable value to the citizens of these States—a currency whose credit would be such as to command an extensive circulation, not only within the States granting the charter, but in the neighboring States, and to some extent throughout the Union. \* It is believed that from the South Western Rail-Road Bank, we may immediately realize most of the advantages expected to be derived from a Bank of the United States, without interfering essentially with that Institution, should it be hereafter established. The history of the United States affords no parallel to our bank. Never before have three States concurred in granting any bank charter, and never has so liberal a charter been granted by any State. No bonus is required to be paid to either of the States. The stock, as well as the dividends thereon, are expressly exempted from taxation in the State of South-Carolina, and substantially so in the States of North-Carolina and Tennessee, and the bills of the bank are made receivable at the State Treasuries. \* It will be seen on referring to the charter, that in the present state of the subscription to the Road, (two instalments of \$5 each having been paid) the Stockholders will be entitled to hold bank stock equal to \$30, on each share held in the Road, of

which \$12½ will be payable at the time of subscribing, and the remaining \$17½ at such times as may be deemed advisable by the Directors of the Bank. At every subsequent call made for the Road, an equal amount may be called for in the Bank. A subscriber having paid ten dollars on his stock in the Road, may therefore hold \$30 of stock in the Bank, and at each successive call the amount of stock in the Bank will continue to exceed the stock held in the Road by an equal amount, until the Bank capital shall amount to \$6,000,000, when they must proceed together *pari passu*, until they amount respectively to \$12,000,000.

"The Stockholders in the Bank will meet in person or by proxy, in Charleston, on the 20th of November, for the purpose of electing Directors, and it is proposed that the Bank shall go into operation as soon thereafter as possible, for which purpose, the bills of the Bank of the various denominations, are already in the hands of an Engraver, and a temporary Banking House will be provided. Branches will be established in Tennessee and North-Carolina, as soon as possible after the Mother Bank can be put in operation in Charleston."

Treating of the construction of the Charleston Road, we are informed experiments are being made by Mr. Tupper, the object of which is, to preserve the timber used for the rails and supports. We are pleased with this, and hope they may be eminently successful; for preservation of the timber so employed, is of almost incalculable importance to the Company. The saving in labor and money, will materially increase the profits of the road.

The report next invites attention, to a tabular statement of the receipts of the Charleston Road, showing (unfinished as it is) a progressive increase, as follows:

*Statement of the Income of the South-Carolina Canal and Rail-Road Company, and of the number of bales of Cotton conveyed to Charleston upon the Road, from 30th October, 1830, to the 30th June, 1838.*

	No. Pass.	Amount Pass.	Amount Freight	Mails, Sto- rage, &c.	Total Receipts.	No. Bales.
Oct. 30, 1830, to } Dec. 31, 1833. }					44,070 73	
In 1834, - - -	26,649	79,050 35	83,214 44	4,294 66	166,559 45	24,567
In 1835, - - -	34,283	109,576 61	131,782 94	8,394 35	249,753 90	34,760
In 1836, - - -	39,216	129,982 34	140,033 84	1,597 81	271,613 99	28,497
In 1837, - - -	41,554	131,282 61	138,269 17	10,663 10	280,214 88	34,395
In 1st half of y'r 1838	23,608	80,642 77	78,046 69	5,541 91	164,231 37	17,975
In 1st half of y'r 1837	22,506	71,202 12	45,581 26	5,294 14	122,077 52	6,220



The receipts for 1837, amounting to \$280,214 88, the Road paid the old Company on their 20,000 shares (or \$2,000,000 stock) a fraction over 14 per ct.

The report concludes with some reflections upon our peculiar kind of labor, &c., and references to the reports, and opinions of Engineers.

So far the President and Directors have done well—better could not have been done—and they merit the thanks and confidence of the Stockholders, and of the public. There is however a view taken in their report, of the labor to be procured along the course of the road which, in our humble opinion, is erroneous. If the laborers in the vicinity of the road, shall be induced to abandon the plough for the spade and barrow, we venture nothing in saying, the prices for provisions of every kind, from Charleston, as far as the road shall be in the course of construction, will be greatly advanced. These laborers, becoming consumers, instead of continuing producers, must be subsisted upon provisions produced at, and transported from, points beyond the influence of the road contractors. Purchasing provisions brought from a distance, will as effectually scatter our money among remote communities, as if paid to the homeless wanderer. We think more so, for if our planters and farmers pursue their appropriate business, and strangers construct the road, they will have at their doors a market for part at least, of their surplus produce, and when the road shall be completed and the laborers dismissed, they will carry away but little. Meanwhile, the planter or farmer has not neglected his buildings, his fences, his stock, nor his lands, if he be either a good planter, or farmer. Besides, some of the laborers must be retained all time to come, by the Company, and it cannot be doubted, that many of those put upon the road from first to last, will form attachments, and settle among us. They would have little leisure, (supposing them to have the desire) to associate with our slaves, as is objected to them in the report. We apprehend less from them, than from the incendiary abolitionist in the guise of a pedlar, or of a village or road-side shop-keeper. With all possible deference for the opinions of others, and particularly for those of the President and Directors of the L. C. & C. Rail-Road Company, we give it as our opinion that the road should be construct-

ed, without at all interfering with the agricultural laborers in the country through which it will pass ; that the laborers, white or colored, should be obtained from among the unemployed in the towns and villages along its route, and if necessary, from more distant parts of our country—even from Europe. Because, as already intimated, the withdrawal of each laborer from the field, involves the necessity not only of procuring provisions and clothing sufficient for his subsistence, but of supplying to the community the amount, he was accustomed, but has ceased, to produce ; and because the injury resulting from neglect of *fixtures*, *fencing*, and *stock*—and from *want of manure* to the land, is far greater than is immediately apparent.

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*On the Improvement of Soils.*

The attention of the planting public is called to the communication made by Dr. Joseph Johnson, to the Agricultural Society of South-Carolina. We are sure that enlightened body will not remit in their exertions to place the agriculture of this State on the most respectable footing possible, but without a willingness among planters and farmers generally to be instructed, and a ready alacrity to practice what they learn, no Society can do much—the benefit derived from the research, experiments, and labor of its members, will be very limited in its operation. Nature has bountifully supplied us with two invaluable manures, which till lately, have been almost unnoticed—marsh mud, and shell marl. We view with alarm the stream of migration setting Westwardly—years have gone by, and the cry is still “for the West”—and thus, are we drained annually of our productive, and therefore most valuable, class of people. To this we may add the loss of labor, suffered by the annual sale and shipment of negroes to other States. This alone, is an evil of great magnitude, but which cannot be remedied without resort, to legal enactments, which ourselves would consider oppressive—as denying us the right, to dispose of our property in the manner most conducive to our interest. For the other evil—migration to the West

—there is a remedy ; but it must be applied to the people at large ; each individual must be convinced that it is not necessary to go Westward, to better his condition ; that the sacrifices he must make before he starts, the trouble, risk, and expense of traveling to his new home ; the purchase and clearing of new lands, putting up shanties and fences, will cost him much more than to remain at home and do as well as he promises himself, to do at the West, to say nothing of abandoning the homestead of his fathers, and sundering all the associations of his youth and manhood—perhaps even of riper years. Western lands like all others, will in course of time become exhausted of their fertility, and the same imaginary necessity which impels to one removal, will prompt to a second, a third, and so on, as often as lands become less productive than some, we hear of nearer sun-set. All this is folly. The condition of the old world proves it so. People still derive bread from, and live upon, lands, which have been cultivated for many centuries. MANURES ONLY have enabled them to do so—*manures* can make the South rival the West—and *manures*, will furnish the skilful and industrious with unanswerable arguments in favor of remaining at HOME. This movement Westward is unpatriotic—un-natural ; we cast off our own mother ; she who nursed our infancy, and bestow all our strength and energies upon another, an adopted one, who knows us not, and cares not for us, farther than we make her richer, or stronger.—*Editor.*

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*Mr. Editor,*—I take great pleasure in handing for publication, a communication submitted to the South-Carolina Agricultural Society, by Dr. Joseph Johnson, on the subject of Marl as a manure. It is one fraught with valuable consequences to the whole State, and particularly the lower sections. All land in the vicinity of a metropolis, becomes more valuable from proximity to a market, and whatever can restore its fertility, demands great consideration. The community therefore are indebted to individuals who offer the means of effecting such a purpose, and when suggestions emanate from so philosophic and practical a mind as Dr. Johnson's, they demand attention and patient experiment. Many sections of country in the vicinity of Charleston, and particularly along the rivers, contain large beds of marl, and the suggestions

thrown out may easily be tested. The fertile soil may be sought (as familiarly entitled) to the far West, yet even there its properties are not more enduring than at home, and when we consider the privations of possession, of separation from kindred, early association broken, and loss of polished society, which must be all forgone in seeking a due return for labor, it surely becomes us to secure advantages nature presents at home. Let us listen to those then who lure her treasures from her, and avail ourselves of the blessings she tenders. Let us ascertain and estimate the advantages we enjoy. We will then revel under the shade of our own vine and our own fig tree, and our hearts will rejoice with the endearing recollections of home, around the cherished hearths of our ancestors.

The concurrence of Dr. Johnson in publishing his remarks, was politely granted to the Corresponding Secretary.

R. W. ROPER.

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*Communication of Dr. JOS. JOHNSON, to the Agricultural Society of South-Carolina, on the Improvement of Soils by Marl and Lime, &c.*

Charleston, 20th August, 1838.

*Gentlemen,*—Most of you have seen the papers occasionally published in the Southern Agriculturist and other periodicals, on the uses of marl and lime as manures for sandy, sour, and exhausted lands. Ruffin's Essay on Calcareous Manures, has no doubt been read by most of you ; but you may not be as well informed, that these valuable manures are found in almost every part of our middle and low country ; and on the banks of the Savannah, Edisto, Ashley, Cooper, Santee and Pedee rivers, and on many of the intermediate inferior water courses.

Mr. Wm. Scarborough, who lived 15 or 20 years ago, on the Lower-Three-Runs in Barnwell District, told me that he had accidentally discovered a bed of marl in digging a ditch, and applied it to his very poor high land, in the proportions recommended by agriculturists. Even in the first year, the benefit was very evident ; in the second it was greatly increased, and in the third year, the produce of his marled land was threefold greater than it ever had been previous to the addition of marl.



Mr. Morton A. Waring tried it one year only, on a piece of land which he then owned on Ashley river. The produce was increased even in that first year about 50 per cent., but as he then sold the place, he did not know whether it had been cultivated in the succeeding years or not.

Mr. James B. Richardson, the present Representative from Sumter District in our State Legislature, told me that he had procured some fossil shells from Santee river, made lime of them, and applied the lime to some of his old fields, which had once been first rate land. The consequence was, that they became more productive than they ever had been, even when first cleared. Some of you may know of other instances of success, I never heard of a failure where the cultivation was continued.

But practical knowledge is much wanted on this subject; and even if the proportion of marl to each acre recommended by the most approved writers on this subject, be applied to our lands, some difference may be discovered in our soils, or in our marls, or in some other respect.

It is first of all desirable to know whether the marl within our reach, is composed of lime, clay and sand, in proportions which would encourage us to dig and cart it to our old fields. This question will be readily answered by any gentleman acquainted with Chemistry. I have analyzed several specimens, and will cheerfully continue to afford every information in my power. All marls effervesce if vinegar be poured on them, and this test is within the reach of every inhabitant, however distant he may be from those who, can give more certain and correct information.

It is next desirable to know at what time, and in what quantities, marl should be laid on the fields. These questions I request of your Society to have ascertained by the experiments of practical men. I suggest that the time which can be best spared for such works, is the best time. When the crop is laid by in the summer, the marl may be dug out and left to dry in heaps. In the winter it may be carted into the fields, and scattered in the trenches to molder until the spring, when the plough can do all that is farther necessary. Mr. Ruffin thinks that the best way is to keep one man constantly employed with a horse and cart, all through the year, and that 60

acres may be thus effectually manured in one year, requiring no other or additional manure for 7 or 8 years.

The quantity required varies from 200 to 300 bushels per acre, according to the quality of the marl and the nature of the land. The cost of manuring would therefore be from \$2 to \$5 per acre, which I suppose to be cheaper than clearing land, where the wood cannot be sent down to a market. If the returns for this expenditure, equal those reported in Virginia and New-Jersey, the crop will be increased three-fold, say from 10 to 30 bushels per acre. The profit would therefore be increased not only \$20 per acre for one year, but as no other manuring is required for 7 or 8 years, it would be at least \$120 per acre, returned for \$5 expended. If 20 acres be cultivated in corn by one boy and horse, he will make for his owner \$500 or \$600 per annum, Corn being supposed to sell at \$1 per bushel. In affording this profit, he would only work at the crop three or four months, all the rest of the year, he might be employed in marling other lands.

So many laborers have been taken off from the cultivation of provisions in the United States, to become the consumers of provisions, while laboring in the construction of Rail-Roads and other public works, that provisions cannot be otherwise than dear, for many years to come. The planter who most successfully cultivates provisions, will therefore be best rewarded, while cotton is at the present moderate rates.

But, gentlemen, there are other considerations of great importance to most of us. Most of us have children, relatives and friends, who have left the State and gone Westwardly, to seek for new lands. Many more, distinguished for talents and enterprise and public spirit, may be expected to follow, unless something can be done at home to afford them profitable occupation. The rank of South-Carolina among her sister States, will be diminished in proportion to her diminished population and productions. I trust that something may yet be done, not only to arrest this emigration, and render agriculture more profitable, but to render the number of persons engaged in agriculture, much more numerous than has ever been known, at least in the middle and lower portions of the State. Are not the most of you, gentlemen, owners of uncultivated lands in this portion of the State, for which

there has hitherto been no demand, nor any prospect of their being wanted, for cultivation? If by the successful use of marl and shells, the old fields in their vicinity can be increased in their productions, from 10 to 30 bushels per acre, would not the value of such lands be increased in proportion, and would not you, the proprietors, find your property doubled in value by the discovery? Would not all other lands in the vicinity of the marl and shells, although never settled, be improved in proportion with the old fields, and will not the proprietors reap the benefit, whatever that may be?

If you can make it appear to a farmer that he can live with his family in a pine land settlement, enjoying health and every other comfort in life, while he can lay up \$400 or \$500 per annum, from the work of every one of his family who can plough a neighboring field; are not such men likely to become settlers on these vacant lands, and increase their value? Are they not more likely to settle on these lands, when they ascertain, that they may cultivate both a winter and a summer crop in the same year? If these advantages be made known in Europe, are not the skilful experienced peasantry in the North of Italy, in Switzerland, Germany, Holland, Poland, and other parts of Europe, likely to collect in this part of our State, and form a population of hardy yeomen, who would quiet all apprehensions of a domestic nature? With such prospects and probabilities, is it not worth your while, to set on foot a series of experiments, for the purpose of ascertaining how far the marl and shells found in South-Carolina, may be made to increase the agricultural productions of the country?

Lime and marl are the most durable of all manures; but the latter in particular, requires about three years to perfect its influence over the land. It will therefore be necessary to continue the experiment at least three years in succession; it may also be expedient to manure and cultivate a new piece of adjacent ground each year, by way of testing what had preceded.

With much deference, I propose that your Society offer a premium for the best series of experiments with marl found in South-Carolina, on a stated quantity of sandy land, and continued three years—the quantity of marl applied to each acre, and the productions of each acre

being distinctly reported to the Society, with any other circumstance deemed important by you.

The same premium for the same experiments on clay land.

The same premiums for the same experiments with unburnt, pulverized or moldering shells, or loose lime stone, both on sandy and clay lands.

The same premiums for the same experiments with lime burnt from shells, or from loose lime stone, both on sandy and clay lands.

I beg leave to submit these suggestions for the consideration of the Agricultural Society, subject of course to any amendments or alterations that they may think expedient. Their greater knowledge and experience must dictate.

I am, very respectfully,

Your most obedient servant,

JOS. JOHNSON.

*To the President and Members of the  
Agricultural Society.*

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*Secret for making New Wine.*

An esteemed friend handed us the subjoined documentary evidence, in support of the pretensions of Mr. Da Costa, to the possession of a secret for making "new wine in *six* days," and for converting "most inferior" into the "most excellent wines in the space of *two weeks*." The gentlemen subscribing the certificate furnished Mr. Da Costa, have not said they all saw the process of making new wine in six days, and improving most inferior wines in two weeks, but as their respectability forbids the slightest suspicion of their countenancing a trick of this or any other kind, we must presume they did all, see the wonder performed. Another reason for believing *they all saw* the grape converted into excellent wine in *one week*, and undrinkable, into good wines in *two weeks*, is to be found in the fact that two of their number have agreed to pay FIFTY DOLLARS each, "so soon as he (Mr. Da Costa) shall deliver Mr. James S. Guignard full and ample directions in writing, showing clearly the proper



mode and manner of making, improving, and clarifying of wines, as it is practiced by him in their presence," i. e. in the presence of James S. Guignard, and Dr. Percival. The N. B. by Mr. Da Costa, we will believe the ebullition of honorable pride—strong in its truth. He claims the "system as his own," and he has good reason to be proud of a discovery, which must rank in point of value and usefulness, among the most important of our times.

We commend Mr. Da Costa, to the patronage of all the Agricultural Societies in our State. Hitherto, fear of the rot, has been a bar to cultivating the grape upon a large scale. Mr. Da Costa now offers a remedy for, or a preventive of, this disease, and we trust he will find among us such liberal patronage, as to induce him to remain here. He has "lost his country and every thing there"—cannot we make him forget that loss? Let us try.

At present the merchant, is the most deeply interested in this wonder working discovery, and for his especial benefit, we request the Editors of our daily papers to republish Mr. Da Costa's letter, and the documents inclosed. Many dealers have wines they are almost ashamed to sell, but cannot afford to give them away, or afford even, the loss by sales at auction. Let such, purchase the secret; it is worth FIFTY dollars, and be it remembered, it will, unlike any other tax, be but once paid.

If Mr. Da Costa's system promises to prevent rotting of the grape, every vine growing country in the world, is interested in his discovery; and as he is with us, he should be aided and encouraged in his experiments—if experiments they are; if they are not, and his offers are based upon established facts, he should be kept among us at almost any cost. The late Mr. Herbemont, of Columbia, proved to the conviction of the most sceptical, that the grape, can be cultivated to greater advantage than cotton of any name, or staple. The friends of our country generally, and of *economy* and *temperance* especially, should zealously encourage every effort, to make the culture of the vine one of our ordinary pursuits,

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Columbia, S. C., 13th October, 1838.

*My much esteemed Sir,*—Permit me to take the liberty to address myself to you on this occasion, for the purpose of making you acquainted with my art of preparing wines

and vines ; because you and your friends may have want of me in your city. In such case, if you could assure to me a good portion of bad wine, wine of the most inferior quality, good for nothing ; wine with bad taste and bad smell, almost vinegar ; I can make it become *excellent wine* in the space of two weeks only. It is a fact ; and the documents that I have the honor to inclose within, will prove to you my assertion. Please excuse me the liberty I take. Should you be so kind as to give me your answer, I will be ready to go to your city in the month of December next.

Yours, truly and respectfully,  
CORREA DA COSTA.

To J. R. VALK, Esq.

We, the undersigned, having seen and tasted the new Wine made in *six days*, by Mr. Correa da Costa, and also, the *very inferior Wines* improved by him in *two weeks*—take pleasure to declare and certify, that the system of Mr. da Costa is entirely commendable, as it is certainly the best American Wine we have seen, both for quality and flavor, as well as expedition. In the space of *one week* from the gathering of the grapes, every Vine Planter may have excellent wine ready for sale ; and the *most inferior wines* can be made into the *most excellent wines* in the space of *two weeks*, when prepared by the system of Mr. Correa da Costa.

Mr. Correa da Costa also informs us that his art extends to the planting, rearing, trimming, grafting, inoculating, and cultivating the vines—and he is of opinion that a vineyard attended to under his management, will be free from that destructive malady, the rot, which has so often blasted the fairest prospects.

Columbia, S. C. Oct. 5th, 1838.

James S. Guignard,  
Alexander Herbemont,  
Dr. Percival,  
Dr. Wells,  
Dr. Marks,  
Dr. Fitch,  
G. W. Daniel,  
Sidney Crane,  
W. B. Thomas,  
Kinsler, McGregor & Co.  
A. L. Kline,  
P. W. Knapp,  
Aug. W. Eaton,  
Dr. Gibbes,  
James L. Clark,  
Col. Preston,

Owen McKiernan,  
Col. McCord,  
I. D. Mordecai,  
Robt. Mayrant,  
John Nuffer,  
Maj. Thos. Taylor,  
A. S. Johnston,  
Major Starke,  
Dr. John Wallace,  
Col. W. Hampton,  
Dr. J. G. Guignard,  
Benjamin Tradewell,  
Dr. E. W. Fisher,  
Dr. John Fisher,  
E. Friday.

COLUMBIA, Oct. 8, 1838.

From the specimens exhibited by Mr. Correa da Costa, of his improvements of bad and inferior wines, we deem that much benefit will result to the Wine Makers and Vine Growers of this State, by obtaining his art of so doing. We do, therefore, for the purpose of ob-

taining his *valuable secret*, promise to pay to him the sums opposite to our respective names, so soon as he shall deliver to Mr. James S. Guignard full and ample directions in writing, showing clearly the proper mode and manner of making, improving and clarifying of wines, as it is practiced by him in our presence. And should any of us wish to have our wines improved, we are not to pay to him more than twenty-five cents per gallon, exclusive of ingredients, and *which secret we are to keep to ourselves*.

JAMES S. GUIGNARD, \$50  
Dr. PERCIVAL, \$50

N. B. A good impostor may deceive a half dozen fools in a large place, but the "*American Wine*," after having been improved by my own hands, according to *my own system*, and in the presence of Major Guignard, cannot deceive *thirty-one* respectable gentlemen in Columbia. Every person that has compared the samples of the inferior wine with the same wine improved by me in *two weeks*, has expressed his amazement for such wonder. It is a fact, it is *not* a trick. My *improved wine is immortal*; keeps forever, and every day becomes better. With regard to my *new wine* made in *six days*, I think it is enough to be mentioned, to be declared a wonder. Both wines have been seen and tasted by a respectable community of this town, and I have the glory to offer my services to Columbia with *my system of preparing wines and vines*—a good source of speculation and profit. I have trusted my secret to Major Guignard, and as he has seen every thing that I have made, to him I refer those that say with the incredulous disciple, "it is necessary to see for to believe it." The fact is that it is the true transubstantiation of the wine. The knowledge of this united system is absolutely necessary to all Vine growers and Wine merchants. Wine, worse than vinegar, that has been sold at 12 cents per gallon, is now *excellent wine*; vineyards which have produced *only rotten grapes*, will, in the future, produce excellent crops of aromatic juice for making *American Wine*, in order to rival the best *improved wines* imported from Europe. The new wine made in *six days*, requires the expense of *four dollars only, in each 120 gallons of juice*.

Messrs. Abram Geiger, has about 60 acres of land planted with vines; Herbemont 40 acres; Guignard 12; Neuffer 10; and perhaps 10 acres more, belonging to Dr. Percival, Dr. Marks, J. L. Clark, D. Ewart and L. Sherman: all these vineyards *cultivated as they ought to be*, would yield a profit exceedingly superior to a plantation of cotton of the same extent.

Having unfortunately lost my country and every thing there, however, I can manage the sword and the plough alike. In the four years of my emigration, I have traveled throughout all Europe; I have visited the capitals of *all nations*; and I can declare better than any body else, that Guignard wine, Richland wine, Amaranth wine, and Costa Madeira, can be transported to Europe, and be presented at the best tables, because they are, if not superior, at least equal to the best wines made *and prepared* in Madeira, France and Spain.

All these wines are now ready for sale, at Mr. Sidney Crane's, at \$1 per bottle.

Persons wishing to have for themselves the secret of making new wine in *six days* (which of course, is a great acquisition for the next vintage) and also, the secret of improving bad wines in *two weeks*, are invited to call at Mr. Guignard's office at the Court House, where the list of subscribers is open for that purpose.

CORREA DA COSTA.

*Grasses &c. for Sheep.*

*Mr Editor,*—As your valuable work, is open to all subjects connected with the husbandry of our country, and more particularly this Southern portion of it, I beg leave to occupy a small space. The growing of wool does not much interest us at present, but the time is coming when it may be necessary for us to make every edge cut. Whether so or not, there are always among us those who are fond of good and sound mutton, and many, who are deterred from raising sheep by fear of the rot, and other disorders. My experience may remove a portion of that fear. I take no more than ordinary care of mine in winter, but I observe in the pine barren where they pasture, a species of creeping pepper grass of which they are very fond. It comes up early in February, and and dies in the summer. The stimulating warmth of this food, preserves them in health, and keeps them free of the rot, and other diseases so fatal to sheep, in cold rainy seasons. Those who have the pepper grass, and desire to raise sheep, should encourage the growth of it. There are other plants and grasses, which being pungent will answer equally well, and of which sheep are fond. Among them are mint, penny-royal, and parsley. Satisfied with my spontaneous growth of pepper grass, I have not cultivated either of the last mentioned aromatics, but I think their having a good effect on sheep, cannot be doubted. I would advise cultivation of the pepper grass however, in preference, but only because it is more proper and natural to recommend more highly what I *know*, than what I only believe, no matter how confidently. It is certain however, that sheep take freely all the plants I have named. If this communication instructs but one individual, I shall be happy in having done some little, towards advancing the husbandry of my native state.

Thanking you for your indulgence, I remain

Your well wisher and Obt. Svt.

A FARMER.

*Edgefield.*



## PART II.

### SELECTIONS.

#### *Salt as a Manure.*

[FROM THE GENESEE FARMER.]

Few instances have come to our knowledge in this country, where salt has been made use of as a manure; yet from the common and extensive use made of it in England and some parts of the continent it would seem deserving of more notice than it has yet received. We hope, by alluding to it at this time, to induce our farmers to make some experiments with this substance, since should it realize the benefits ascribed to it by foreign writers, a new source of fertilizing our soils would be opened to us, and the salt springs of this state (N. Y.) assume a new and greatly augmented value.

Like all mineral manures, salt acts as a stimulous to plants; like lime it possesses no direct nutritive properties; and though sometimes present in plants in small quantities, it does not seem to be taken up as food, or to enter into combination with the substance of the vegetable. It appears perfectly rational therefore, that its effects will be very different on different soils and may be indefinitely varied by the quantity applied. Like all mineral manures, also, too large quantities are fatal to vegetation; and the same substance that in proper proportion would be felt beneficially, if applied too liberally would entirely destroy. The stimulus becomes a poison, a fact that is not without a parallel in the effects of stimulus in the animal kingdom.

For the best account of the action of salt as a manure, we are indebted to the prize essay of Mr. Sinclair, presented to the English Board of Agriculture. Mr. Sinclair in that paper details a great variety of experiments made to ascertain the comparative value of salt, lime, soot, dung, and oil cake, and it abounds with curious and important information. His experiments on wheat will show its efficacy in field culture.

#### *Wheat after Barley.*

Soil, without manure,	produced	16½	bushels	per	acre.
—, dressed with 11 bushel salt,	"	22½	"	"	"

#### *Wheat after Flax.*

Soil, with 11½ tons spit manure,	produced	16½	bushels	per	acre.
—, with 6½ bushels salt,	"	23½	"	"	"

#### *Wheat after Beans.*

Soil, without manure,	produced	11½	bushels	per	acre.
—, with 6½ bushels salt,	"	21	"	"	"

*Wheat after Pease.*

Soil, without manure,	produced 16 bushels per acre.
—, with 6½ bushels of salt with seed,	17½ “ “
—, “ “ dug in with the seed,	23½ “ “
—, 6½ bu. salt, and 6½ bu. soot, dug in,	20 “ “

*Barley after Turnips.*

Soil, without manure,	produced 12 bushels per acre.
—, with 5½ bush. salt before sowing,	28½ “ “
—, with 11 “ “ “ “	28½ “ “

Mr. Sinclair also records experiments made on spaces of 26 feet square, rich soil, with salt at the rate of 5½ bushels per acre, sown with *Talavera wheat* on the 5th of November, and reaped on the 2d of August, which respectively produced at the rate of 91, 73 and 82 bushels per acre. In the first instance, the salt was mixed with the soil 4 inches deep, before the wheat was sown; in the second, put in with the seed; and in the third, simply applied to the surface.

Mr. Cuthbert Johnson a farmer of Essex, in his work on the employment of Salt as a Manure, states the result of some experiments on his own farm to be as follows:

Soil, without any manure for 4 years,	13 bush. 26 lbs. per acre.
—, manured with dung to a previous crop of potatoes,	26 “ 52 “ “
—, with 5 bush. of salt per acre and no other manure for 4 years,	26 “ 12 “ “

The British agricultural publications contain great numbers of reports, in which the increase of the wheat crop was from six to eight bushels per acre; and some in a far greater proportion. Of its effects on barley, we give one instance from the report of Mr. Ranson, in Suffolk:

Soil, without manure,	produced 30 bushels per acre.
—, dressed with 16 bushels of salt in March,	“ 51 “ “

All these writers agree that the grain from salted land is heavier, of a plumper kernel, and of a decidedly better quality for flouring.

The application of salt to *root crops* produced good effects, as may be seen from reports of experiments made by Messrs. Collins, Johnson, Ackland and Hare, particularly on turnips, carrots and potatoes. In one experiment made by Mr. Sinclair, the result was as follows:

Carrots without manure,	23 tons 9 cwt. 107 lbs. per acre.
13½ bush. salt mixed with seed,	30 “ 12 “ 79 “ “
6½ “ “ dug in “	44 “ 14 “ 17 “ “
13½ “ “ “ “	31 “ 13 “ 40 “ “
6½ “ and 6½ soot dug in,	40 “ 4 “ 97 “ “

In the experiments of Dr. Cartright upon potatoes, the soil was a ferruginous sand brought to a due texture and consistence by a liberal covering of pond mud, the yield was as follows:

Potatoes, without any manure,	157 bushels per acre.
—, with 9 bush. of salt per acre,	198 “ “
—, with 8 do. and 30 bush. of soot,	240 “ “
—, with 30 bush. of soot per acre,	182 “ “

Mr. Cuthbert Johnson's experiments with potatoes on a light gravelly soil gave:

Potatoes, without manure,	120 bushels per acre.
——, 20 bsh. of salt put on in Sept. previous,	192 " "
——, stable manure,	219 " "
——, do. and 20 bushels of salt,	234 " "
——, 40 bushels salt, half at the time of planting, and half the previous Sept. with stable manure,	244 " "

According to the testimonies of the different British and foreign writers, from 5 to 15 bushels of salt per acre is as much as can be safely used, if applied to the soil with the seed, or as a dressing.

"In Dacre's 'Testimonies,' containing a voluminous mass of facts adduced in favor of the use of salt for agricultural purposes, it is said that although the fertilizing properties of salt, when used by itself as a manure, are very great, it yet requires discretion to guard against putting on too much: a few bushels to an acre is sufficient. If any large quantity be put on, it will by its pungency destroy vegetation for a time; but afterwards, when the salt is well dissolved in the soil the land becomes very rich.—When mixed with dung and other manure it is very efficacious; but the safest way of using it, is to sprinkle it occasionally over the dung in the cattle yard, that it may amalgamate with it and ferment. The effects on the continent, as described by that eminent agriculturist Von Thaer, appear to be similar to those we have stated. When applied in *large* quantities, vegetation seems entirely stopped; but when the salt has been washed in by the rain, and partly decomposed by the mould, it adds to its force during several years. On rich land when spread in *small* quantities, it produces very sensibly favorable effects, though of short duration; put on poor land in the same quantity, and it has been found wholly ineffectual."

For further remarks on the use and application of salt see British Husbandry; Von Thaer's Principles of Agriculture; and the Edinburgh Quarterly Journal of Agriculture.

Though some recorded experiments may go against the use of salt as a manure, yet the great mass are clearly in its favor; and we think our farmers in this country would be wise in experimenting with it, cautiously perhaps at first, till they had made themselves familiar with its power, and the best methods of application. If any have already tried it, we should be happy in laying the results before the public as every thing relating to manures must always possess a paramount interest with the farmer.

### *Agricultural Notes of a Tour in the West.*

[FROM THE FARMER'S REGISTER]

Nelson County, Va., July 12th, 1838.

Dear Sir—I left Baltimore, on the 31st of March, for the west, by the rail-road to Fredericktown in Maryland; and passing over a poor stony and hilly country for the first forty miles, reached that place a little after noon. The country as you approach Frederick, opens into a beautiful valley, well cultivated, and at this time presented numerous fields of wheat, very luxuriant in appearance. Contrasted with the wretched region in the neighborhood of Baltimore

it appears to great advantage. Valley succeeds valley, with little difference, apparently, in soil or culture, until the traveller approaches the Alleghany range of mountains. The passage across them, however fertile in scenes interesting to the "eye of taste," affords little to engage the attention of an agriculturist, except the fine national road, over which the eastern and western commerce and travel are here conducted. To us in the south, who have been struggling since the first settlement of the country with the worst modes of conveyance for our agricultural products, it is edifying to see what an immense amount of labor may be saved in the transportation of crops to market by the construction of good routes; and, consequently that a great enhancement in their value, results from the diminution in the charge of transportation.

Fifty-six hours of constant traveling carried us from Baltimore to Wheeling; yet, so good was the road, although across lofty mountains, and so easy to sleep in the coach, that the journey was attended with very little fatigue.

The vegetation on the Ohio seemed at the first glance to be of a much richer and deeper green, than any in the east, although the uncommon coldness of the spring had retarded both so much that very little more than the first traces were visible on either side of the mountains. A steamboat ready to depart, afforded an immediate opportunity of descending the Ohio, and, in about thirty-six hours after leaving Wheeling, I was landed at Portsmouth, at the termination of the Ohio and Erie Canal. The navigation of the canal was just resumed, after the winters suspension, and taking a passage in an excessively crowded canal boat, I arrived at Chillicothe on the following day. During this rapid journey, I had an opportunity of seeing the wheat-crop was exceedingly promising every where, but more particularly so along the course of the Ohio and up the Scioto. Reposing here some time, I received information, in several respects, of the trade and agricultural productions of this very rich valley, which may possibly not be uninteresting to some of the readers of your useful journal, although it is far less extensive than I wished.

The Scioto river is bounded by exceedingly rich and extensive flats, the dark alluvial soil of which varies from one to eighteen feet in depth, and possesses a proportionate fertility. From sixty to eighty bushels of corn to the acre are produced from lands long and successively cultivated in that crop; and there are well authenticated cases of from 120 to 160 being obtained from fresh lands, by good and careful culture. There are instances where the same field has been cultivated for forty years in succession in corn, with very little diminution, to the eye, in its product, at least for the last thirty years. These grounds yielding so abundantly in corn, are too rich to be safe for wheat, although good crops are sometimes obtained. But the neighboring highlands produce small grain of all kinds most bountifully, and all the most valuable grasses in great abundance. It may be imagined that a country endowed with such capacities for rearing live stock would have a portion, at least, of its capital applied in that manner. And that was the case to a great extent before the construction of the Ohio and Erie Canal opened the markets of New York and New Orleans to the productions of the soil. Even now that trade affords employment to the resources of many of the most wealthy landholders. Large numbers of cattle purchased westward of the Scioto valley, in addition to those bred in it are either fattened there



for market, or being kept for some time, are sold to persons living in the eastern states, to be by them prepared for the consumption of eastern purchases. Hogs too, to a very large amount, are fattened, and either driven eastward, or are slaughtered and salted for exportation. Mr. George Renick, who resides near Chillicothe, is a large landholder, and has long been an extensive and successful dealer in cattle did me the favor to answer some queries in relation to the cattle trade, which I will subjoin in the language in which they were propounded and answered, thinking it better to give his own words, than any version of mine. My questions were the following:

1st. What is the probable number of the cattle annually sold from the Scioto valley?

2d. What proportion are bred in it, and how many purchased elsewhere?

3d. In what parts of the country are those procured that are purchased, and how far from the Scioto are the remotest points?

4th. How long are they kept after purchase, how treated when sold, and at what advance upon the purchase money?

5th. Are they driven directly from the Scioto valley to the places of consumption, or do they stop for any length of time at intermediate points, for further preparation for market?

6th. What are the chief markets for the cattle when finally disposed of?

7th. What will be the probable advantages of the introduction of the English cattle into this region, and which of the English breeds are most esteemed?

Any information deemed pertinent, and not comprised within the scope of the foregoing queries, will be thankfully received in addition to their answers.

The following answers were given:

To question 1st. About thirty-five thousand head, one third of which are corn-fed.

2d. One-third bred in the valley.

3d. They are procured from Missouri, Arkansas, Indiana, Illinois and Kentucky. The most distant point, one thousand miles.

4th. They are kept from six to eighteen months, some fattened and wintered, others corn-fed, then an allowance of half a bushel of corn per day, for five months. The fat cattle are sold in the spring, and the stock cattle in the fall. The advance on the purchase-money, say five dollars per head, for stock, and fifteen for fat cattle.

5th. The stock cattle are driven east of the mountains, and are kept one season. The fat cattle are driven immediately to the place of consumption.

6th. The markets are Philadelphia, New York, Baltimore, and Boston. Some are sold at Pittsburg and Detroit.

7th. The advantages of the English breeds are, being easier kept of larger size, fattening at an earlier age, their beef being of a superior quality, and being better milkers. The Devonshire short-horns, or Durham, are supposed the best breeds.

The quantity of hogs supplied by the Scioto valley annually for distant markets is also very considerable. Messrs. John and G. Wood, large and successful dealers in pork at Chillicothe, were good enough to furnish me with a statement of the quantity supplied by the valley, and country contiguous to it, as will appear from the estimate subjoined.

Pike County,	3,000 barrels of pork.	
Ross,	16,000 "	"
Pickaway,	10,000 "	"
Franklin,	12,000 "	"
Fairfield and Licking,	15,000 "	"
Total, 56,000 bbls. of pork at \$15=		\$840,000
Bacon and lard equal in value to the above,		840,000
40,000 hogs are driven to the eastern and western markets at \$5 per head,		200,000
		<hr/>
		\$1,880,000
About 100,000 barrels of flour are annually furnished by these counties, which averaged at \$5 per barrel, is		500,000
Add \$700,000 for the returns from the cattle trade which I have computed to be the probable amount from Mr. Renick's statement,		700,000
		<hr/>
		\$3,080,000

It will appear that the income of six counties contiguous to the Scioto, from three articles, cattle, pork, and flour, is three million and eighty thousand dollars annually.

The commerce of the country, however, includes many other things, as will be seen from the subjoined table of articles cleared at the Collector's Office at Chillicothe, from December 1st, 1835, to December 1st, 1836.

1,219,711 lbs.	Bacon,
739,141	Lard,
77,780	Coarse grease,
205,592	Iron,
154,840	Merchandise,
70,947	Leather,
37,946	Butter,
21,664	Castings,
14,063	Wool,
8,754	Broom-corn,
6,164	Feathers,
2,277	Candles,
373,369 feet	Lumber,
121,385 bsh.	Corn,
26,898 "	Wheat,
10,235 "	Oats,
4,053 "	Flax seed,
110 "	Potatoes,
25,221 bbls.	Flour,
15,945 "	Pork,
58,000 "	Pork in bulk,
1,675 "	Whiskey,
240 "	and 600 bushels Apples,
178 "	Beans.
43	Pair Raccoon buhr Millstones,
31,000	Bricks.

The Messrs. Woods state they think one half of the pork trade goes to the northern, the other half to the southern markets.

	<i>Dolls. Cts.</i>
Amount of tolls received at this office from December 1st, 1835, to December 1st, 1836,	19,027 31
Tolls received from December 1st, 1834, to December 1st, 1835,	11,857 93
	<hr/>
Increase,	7,169 38
Amount of tolls received from December 1st, 1836, to December 1st, 1837,	31,125 00
	<hr/>
Increase over 1836,	12,097 69

WM. H. SKERRETT, *Collector.*

It is an interesting fact in the statement from the collector's office, that the tolls received should have undergone an annual increase, and that during the year 1837, notwithstanding the manifold inconveniences sustained from the disorder of the currency, and consequent embarrassments of the commerce, the increase over the preceeding year should have been at that place alone \$12,097 69.

In fact roads and canals, like just and equitable government, produce in their operation so many unforeseen advantages, it is impossible properly to appreciate them, until their benefits are experienced. And there is scarcely any country, where persons and property enjoy tolerable security, in which it would be unwise to construct them at any expense within the power of the inhabitants or government to pay. The Ohio and Erie Canal, which passes through the valley of the Scioto, has more than doubled the value of all the arable lands within ten miles of it throughout its whole route, and its beneficial influence is felt over a much wider surface. The income derived from land in many instances has been increased from four to five hundred per cent.

In addition to a highly fertile soil and salubrious climate, recent geological discoveries have shown that Ohio possesses mineral treasures to an incalculable amount, and chiefly in that part of her territory, that seemed least gifted with the means of yielding other productions. Professor W. W. Mather, (principal geologist,) in his report to Joseph Vance, Esq. governor of Ohio, says—"From the reconnaissance of the past season, it is estimated that about twelve thousand square miles of the state are undoubtedly underlain by coal, and five thousand by workable beds of this valuable mineral. In many places several successive beds of coal are superposed one over the other, with sand-stone, iron-ore, shale, or limestone intervening. The coal-beds are favorably situated for working, as they are found in the hills and ravins, where they can be drained with little expense, and without deep shafts and expensive machinery, like those of Europe, or some parts of our country. Probably a mean thickness of six feet of coal, capable of exploration, over five thousand square miles, is a moderate estimate of our resources in this combustible." (p. 1.)

Dr. S. P. Hildreth, in his report to Professor Mather, (p. 2.) says: "That portion of the coal measures of the valley which lies within this state, occupies a space of about 180 miles in length, by 80 in breadth, extending in a south-westerly and north-westerly direction along the borders of the Ohio, from Trumbull county to the mouth of

the Scioto. These immense fields will furnish fuel for a larger population than the soil of Ohio can support for ages; and when the surface beds are exhausted much thicker ones will be found, by sinking shafts to the depth of a few hundred feet, as all coal-beds are thinner in their out-crop, or near their margins, than in the centre of the basin. Of this fact we have proof, not only from foreign fields, but from the disclosures made in boring salt-wells in our own state."

"At a very low calculation (says another member of the geological corps, C. Briggs, jr.) of the amount of good iron-ore, in the region which has this season been explored, it is equal to a solid unbroken stratum, sixty miles in length, six miles in width, and three feet in thickness. A square mile of this layer being equivalent in round numbers to 3,000,000 cubic yards—when smelted will yield as many tons of pig iron. This number multiplied by the number of square miles contained in the stratum, will give 1,080,000,000 tons, which from these counties alone, (Lawrence and Scioto) will yield annually for 2,700 years, 400,000 tons of iron; more than equal to the greatest amount made in England, previous to the year 1829."\*

"In reflecting upon the prospective importance of the iron business to Ohio, a question naturally suggests itself, as to the necessary supply of fuel. Perhaps no fears need be entertained on this head, as the introduction of the hot blast, and the probability that some beds of bituminous coal will be soon brought into use for the smelting of iron-ores, render it nearly certain, that this branch of industry will never receive a check from an insufficient supply of fuel."†

Another valuable mineral (the buhr stone) is most abundant in the same region. It came into use for millstones about the year 1807. "The early manufactured millstones were made of a single piece, but these often proving to be of unequal density, and not making good flour, were abandoned, and stones constructed of separate blocks, cemented with plaster, and coupled together with iron bands. Where these blocks are selected with care by an experienced workman, the flour is said to be equal in quality to that made by the French stones. From the year 1814 to 1820, the price of a pair of 4½ feet stones was \$350, and a pair of 7 feet sold for \$500, while the foreign article sold for a still higher sum. The 4 feet stones now sell for \$150. The manufacture of mill stones is not confined to the waters of Racoon; but it is also carried to a considerable extent in Hopewell township, Muskingum county. The quantity is apparently inexhaustible."‡

Limestone exists in great abundance, of various qualities. "The limestones of this series are interesting, (says Mr. Briggs) not only as affording a flux for the iron-ores of this region, and lime for the various uses to which it is usually applied, but are also of great value for agricultural purposes. \* \* \* Three layers of limestone have been observed. The second stratum of limestone is from 18 inches to 8 feet thick where it has been observed. It is uniformly of a dark color, nearly black, and contains the remains of radiated and molluscan animals of marine origin. This limestone breaks out into oblong blocks, of suitable size for building purposes. The organic remains will add greatly to its beauty when polished." "Since writing the above," (Mr. Briggs adds in a note) "a piece of this dark fossiliferous

\* Geological Survey of the State of Ohio, page 93-6.

† Do. pp 93 and 94.

‡ Do. pp. 33.



limestone has been polished. It is nearly or quite equal in beauty to the best Egyptian marble. If it can be obtained in sufficient quantities, and in blocks sufficiently large, as I think it may, it will be of immense value for ornamental architecture."\*

When we take into consideration the wonderful fertility of the soil of Ohio, its vast and various mineral wealth, its central position in regard to the Union, its easy communication with the great mercantile cities, by prompt and easy steamboat navigation, or by canal and railroad carriage, as New-York, Philadelphia and New Orleans—that the routes of the most important character, yet in contemplation, as those of Virginia and South-Carolina, with her associates, will, when finished, terminate there—it seems an obvious conclusion, more particularly when the sagacious, enterprising and persevering character of the people of Ohio is considered, that that country is destined speedily to attain the condition of one of the most adorned of the United States.

Leaving Chillicothe about the 25th of April, I returned by the canal to Portsmouth, and took a steamboat there for Cincinnati. \* \* \* From Cincinnati, I ascended the Ohio to Pittsburg, and was exposed as far as Wheeling to the danger of bursting boilers, in consequence of a race between the boat on which I took passage, and one which left Cincinnati an hour or two after us. Pittsburg, with its dark and lurid coal-smoke atmosphere, offers little to check a traveller's impatience to continue his journey. I left it the evening after my arrival in a packet canal-boat for the east. The boat departed about nine o'clock at night, and I was consequently deprived of seeing the country in the vicinity of the town, and along the Alleghany river.

The next morning found us near the junction of the Alleghany with the Kiskeminetas, and along the valley of the latter the canal passes on the route to Johnstown, at the western base of the Alleghany. This valley is generally narrow and rugged, abounds in sandstone and the forest growth is chiefly oak. Vegetation on the 27th of April was just discernable on a few trees, near the margin of the river. A few patches of wheat looked well, but the whole aspect was dreary and barren, contrasted with the rich verdure of the Ohio valley. We arrived at Johnstown in the night succeeding that we left Pittsburg—the distance about one hundred and twenty-six miles—and the next morning about sunrise were transferred to the rail-road, which crosses the Alleghany mountains, and communicates with the eastern portion of the canal, at Hollidaysburg. The distance from Johnstown to Hollidaysburg is between forty-two and forty-three miles, and there are ten inclined planes, five for the ascent, and five for the descent of the mountain. The cars are raised and lowered by means of a powerful rope attached to them, and worked by a stationary engine at the summit of the plane. The passengers' cars are detached at those planes from those that carry produce, and are raised and let down first, then the produce cars undergo the same process, and are reunited, at the foot, or summit of the plane. \* \* \* Descending the valley of the Juniata, through the counties of Huntingdon, Juniata, Perry, &c., to the junction of the Juniata with the Susquehanna, and following the course of the latter river, we reached Harrisburg, the seat of Pennsylvanian government, about midnight, and in about thirty-six hours after leaving Hollidaysburg. The valley of the Juniata is wider, and far better cultivated than that of the Kiskeminetas.

\* Geological Survey of the State of Ohio, page 82.

The houses of the farmers are mostly of brick or stone, and good comfortable dwellings. The farms were in neat order, and the wheat fields looked very luxuriant. Farming land in this valley, I was informed, sold at about forty dollars an acre, containing an average portion of highland and low ground. The highlands seem generally to be but of moderate quality, and the mountains, which bind the valley throughout, are poor, steep, and rocky, and bear only a few scrub pines—resembling very much the mountain range between Fincastle in Virginia and the Sweet Springs. Indeed I felt quite surprised to find so large a part of Pennsylvania poor and mountainous. The traveller does not escape from the mountain region until he approaches the neighborhood of Harrisburg, and in passing from Pittsburg to Philadelphia, he sees nothing but narrow valleys and poor mountains, for three-fourths of the distance.

Since the valley of the Juniata has been canalised, the farmers sell every thing they have to spare, in the form of provisions, at good prices. Butter at twenty cents, beef at ten cents per pound, &c.

At Harrisburg, a rail-road commences, belonging to a private company, to which travellers of the packet line are transferred, and which communicates with the state rail-road, from Columbia to Philadelphia. A rapid transit of one day over this space, afforded little opportunity for agricultural observation. I noticed, however, in the neighborhood of Harrisburg, some gallad and gullied fields, (a sight too familiar to the eye of a Virginian.) I did not expect this from the reported excellence of Pennsylvania farming. In the counties of Lancaster and Chester, the farms appeared small, (judging from the great number of good dwelling-houses in the vicinity of each other,) and the cultivation good. But the soil did not seem to possess the fertility usually ascribed to it. Many farmers were actively engaged in liming their fields, I presume for corn. The wheat crop looked worse than I had seen it any where, throughout my whole journey.

It must occur to a most superficial observer, that the country traversed by rail-roads and canals from Philadelphia to Pittsburg, is greatly inferior, in natural advantages, to that through Virginia, contemplated for the James River and Kenawha improvement. The open country of Virginia, is at least as good as that of Pennsylvania and her mountain region incalculably superior. That of Pennsylvania being steep and sterile, with the exception of a few narrow valleys, while the mountainous portion of Virginia is very fertile, the valleys being rich and extensive, and the ridges arable to a great extent, and where not so, in most cases are capable of affording good pasturage. It is plain in a mere pecuniary point of view, Pennsylvania can only receive compensation for her great and spirited works, from the western trade. Virginia, exclusive of the western trade, for the enjoyment of which she will have many advantages, will be repaid by the improvement and traffic of her own territory, which has now scarcely any outlet to market, and is in a situation similar to that of the western part of the state of New-York before the construction of the Hudson and Erie canal.

Very large quantities of produce and merchandise are transported on the Pennsylvania canal and rail-road. The tolls received on that line, from the opening of navigation in the spring to June 2, of the present year, amounted to \$561,635,74. The price or transportation, too, is quite moderate; the carriage of a barrel of flour from Pittsburg to Philadelphia amounting only to one dollar and twelve and a half

cents, over a distance of four hundred and seventy-three miles, it being actually less than it often costs to send one from this neighborhood to Richmond, very little more than a fourth of the distance.

When will the people of the South learn to avail themselves of the blessings Providence has showered around them? Never, I fear, until the wealth and strength of the nation is irreparably concentrated in the North. I am by no means envious of our northern brethren. I heartily wish them success in every legitimate enterprise; but I really feel mortified, that they should so far exceed us in all the enterprises of public utility. It is said of Dean Swift, that riding out in his latter years, in the neighborhood of Dublin, he saw a new building going up, and asking what it was, was told it was a magazine. He expressed himself in the following impromptu, which I am obliged to quote from memory:

“ Here’s a proof of Irish sense;  
Here Irish wit is seen:  
When nothing’s left that’s worth defence,  
We build a magazine.”

And when nothing is left worth struggling for, we will prosecute works of internal improvement.

My journey afforded nothing worth communicating from Philadelphia to Virginia.

THOMAS MASSIE.

### *Books on Agriculture for School Boys.*

[FROM THE FRANKLIN FARMER.]

We have thought the cause of agricultural improvement would be greatly promoted by the publication of a series of elementary books on agriculture, designed for the use of the schoolboy. Why should not our children have facilities for the acquisition of knowledge applicable to this pursuit as well as on less useful ones? If education is designed to fit us to engage in the practical duties of life, why is it that the most important of all earthly subjects, and one which occupies the labors of a vast majority of our people, is not the leading object of the schoolboy's education? We have elementary books on every other subject; we have schools, wherein are taught the rudiments of every science, schools of law, medicine, divinity, of fighting, dancing, and of every thing but agriculture. There is something wrong in the national practice on this subject. We ought to give to the most important subjects, the highest degree of attention—we must graduate various branches of education, by the standard of their relative importance, and give to those having the nearest relation to our most important interests, the greatest share of favor. We ought to have the principles of husbandry taught in every common school and a chair of agriculture endowed in every college. And we think the first step to the introduction of this new branch of education is, to have the necessary elementary school books. We have many men in our country, eminently capable of compiling such works and adapting them precisely to the capacity of the schoolboy. And he who would prepare a set of works on agriculture for the use of schools such as would give to the boys of the country destined for the pursuits of husbandry, a thorough knowledge of the principles and the outlines

of the practice of agriculture, would do more for the general good and for his own literary fame, than in any other walk of science or learning. Let it not be supposed that we decry other branches of science or learning. We are in favor of all; and especially those which contribute useful aids in the practical labors of life. We would render all subservient to man's use; and it is only in this view that they should be appreciated. But it is admitted on all hands, that agriculture is the most universal, the most dignified, the most congenial, virtuous and productive pursuit of mankind—the substratum of all other pursuits—the life and soul of commerce and manufactures—the mother of the arts and sciences—the basis of civilization; and we insist, it is *not* seeking too much when we seek to give to her own child, the husbandman, a higher grade of education. Whatever description of knowledge, relates nearly or remotely, to the multifarious labors of the agriculturist, should be an object of his study and constitute a portion of his exercises at the primary school and the college, and employ his reflections in all the riper years of after life. One of the most absurd and mischievous errors of the day, is that of the father, who gives to the son destined for a farmer, an education inferior to that he bestows upon the one destined for a profession. The husbandman deserves a better education than a lawyer, or a doctor; because his occupation requires the exercise of more knowledge; but it is too generally the case, that he is only allowed some snatched intervals between the crops, “to learn to read, write and cipher”—and this is deemed education enough for a farmer! Oh, what a wretched, miserable error is this—what a foe to the improvement and dignity of the class! It ought, it must be banished, and the practice which results from it abolished, and a wiser and better one substituted. Now, however the remark may seem to censure the general opinion and practice on this subject, and although we may be even ridiculed by many farmers themselves, for the apparent ultraism of the sentiment, we are bold to declare, nevertheless, that the farmer *has need* of a better education, and he actually more often requires the aid of more various branches of science, in his ramified operations, than the member of *any* profession; and we sincerely believe, that if any discrimination should be made in the education of two sons, one destined for a farmer and the other for a profession, it should be in favor of the former. Let us not be misunderstood—the boy destined for a profession or trade, should be thoroughly educated in all branches pertaining to his distinct calling; while the boy intended for a farmer, should be thoroughly instructed in all the principles to which the intelligent and scientific agriculturist stands indebted for the successful result of his labors. We could easily show that these principles are drawn from a wider range of sciences, than are necessary to be consulted by one destined for any of the so-styled *learned* professions; and consequently it would be shown, that the husbandman needs a more extended education. A young man preparing for the bar, is ready to enter upon his legal studies, on attaining some smattering of Latin (or it may be Greek;) and many do not even go thus far, before taking up Blackstone. A short course of reading elementary works on the principles and practice of law, and the student enters on the practical field of his profession. The physician requires more preparation to qualify him for practice. He too, learns the dead languages and studies the principles and practice of his art, but those principles involve a knowledge of various abstract sciences and he is constrained to invoke the aid



of anatomy, physiology, chemistry, mineralogy, botany, &c. &c., before he enters upon the practice of his profession. We are speaking of those studies only as they relate to the *professional* qualifications of the student, and of course we are not to be understood, as denying either the possession or the importance, of other branches of learning, to professional men. They as well as agriculturists and others, in their social and political relations to community, are equally required to discharge the duties of *citizens*; and we hold that all classes should avail themselves of every accomplishment which learning or science can bestow, in aid of the performance of those high duties. But we need not array comparisons or illustrations on the subject; our opinions may be presented at one view. We would give to every one, of whatever pursuit precisely the education adapted to it—and it should be thorough and perfect in all its branches, or at least so far as any or all the branches related to the peculiar pursuit adopted by the student. It should thus qualify him for the intelligent prosecution of the labors of his life and ensure his complete success. It would render the farmer as illustrious, and certainly as useful, in his sphere, as the profoundest statesman or professor. But the subject is too interesting to be treated satisfactorily in the narrow limits to which we are circumscribed; and we mean to pursue it. In the meantime, we submit to the board of education and to the commissioners of common schools, the propriety of early considering the importance of adopting a series of agricultural works, as text books in the schools about to be put in operation, under the excellent common school law of the state. They may do incalculable good to the children of Kentucky, which will flow to other generations, and they may render the system far more useful and effective, by seasonably directing their earnest attention to the subject.

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### *Inoculation, or Budding.*

[From Fessenden's American Gardener.]

"The object in budding is the same as in grafting, and depends on the same principal; all the difference between a bud and a scion being that a bud is a shoot or scion in embryo.

"A new application of budding has been made by Knight. It is that of transferring 'a part of the abundant blossom-buds from one tree to the barren branches of others.' He tried this first on roses, and afterwards on pears and peaches with much success.

"*Advantages of budding.* Budding trees are generally two years later in producing their fruit than grafted ones; but the advantage of budding is that, where a tree is rare, a new plant can be got from every eye; whereas by grafting it can only be got for every three or four eyes. There are also trees, which propagate much more readily by budding than grafting; and others, as most of the stone fruits, are apt to throw out gum when grafted. When grafting has been omitted, or has failed, in spring, budding comes in as an auxiliary in summer.

"*Season of budding.* The operation of common budding is performed any time from the beginning of July to the middle of August; the criterion being the formation of buds in the axillæ of the leaf of the present year. The buds are known to be ready by the shield or portion of bark, to which they are attached, easily parting with the

wood. The buds preferred are generally those on the middle of a young shoot, as being neither so apt to run to wood as those at the extremity, nor so apt to lie dormant as those at the lower end. In some cases, however, the buds from the middle and extremity of the shoots are to be rejected, and those taken which are at the base of the annual shoots, as Knight (*Hort. Trans.* vol. iii. p. 135) found in the case of the walnut tree. Scalope budding may be performed in the spring, or at any season.

"*Stocks for budding* may, in general, be much smaller than for grafting, as the operation may be performed on the same years' shoot. But it may also be performed on shoots or stems of several years' growth, and in such, by inserting a number of buds, a complete tree may be formed at once. Scalope budding may be performed on trees of considerable age.

"*Choice of buds.* For gathering the shoots containing the buds, a cloudy day, or an early or late hour, should be chosen, on this principle, that the leaves, being at these periods in a less active state of perspiration, suffer least from being separated from their parent plant. They are preserved fresh, and may be sent a great distance by inserting their ends in water or moist moss; though in general they should be used as soon after gathering as possible; indeed, as in grafting and inarching, the whole operation ought to be performed with the greatest celerity.

"*Shield-budding, or T budding,* is thus performed:—Fix on a smooth part of the side of the stock, rather from than towards the sun, and of a height depending, as in grafting, whether dwarf, whole or half standard-trees are desired; then, with the budding-knife, make a horizontal cut across the rind, quite through to the firm wood; from the middle of this traverse cut, make a slit downward, perpendicularly, an inch or more long, going also quite through to the wood. This done, proceed with all expedition to take off a bud; holding the cutting or scion in one hand, with the thickest end outward, and, with the knife in the other hand, enter it about half an inch or more below the bud, cutting near half way into the wood of the shoot, continuing it with one clean slanting cut, about half an inch or more above the bud, so deep as to take off part of the wood along with it, the whole about an inch and a half long; then, directly with the thumb and finger, or point of the knife, slip off the woody part remaining to the bud; which done, observe whether the eye or gem of the bud remains perfect; if not and a little hole appears in that part, it is improper, or, as gardeners express it, the bud has lost its root, and another must be prepared. This done, placing the back part of the bud or shield between your lips, expeditiously, with the flat haft of the knife, separate the bark of the stock on each side of the perpendicular cut, clear to the wood, for the admission of the bud, which directly slip down, close between the wood and bark to the bottom of the slit. The next operation is to cut off the top part of the shield, and protrude granulated matter between it and the wood, so as to effect a living union. The parts are now to be immediately bound round with a ligament of fresh bass, previously soaked in water to render it pliable and tough, beginning a little below the bottom of the perpendicular slit, proceeding upward, closely round every part, except just over the eye of the bud, and continue it a little above the horizontal cut, not too tight, but just sufficient to keep the whole tight and exclude the air, sun and wet.

"*Shield-budding reversed*, or *reversed J, budding*, differs from the former in having the transverse cut made at the bottom of the perpendicular slit, instead of at its top, and, of course, the shield is reversed in its position. This mode is represented as preferable to the other by such as contend that the sap rises in the bark equally with the wood; but as this opinion is now generally considered as exploded, the first, or T mode, may justly be considered as the most scientific mode of budding.

"*Future treatment*. In a fortnight, at furthest, after budding, such as have adhered may be known by their fresh appearance at the eye; and in three weeks, all those which have succeeded will be firmly united with the stock, and, the parts being somewhat swelled in most species, the bandage must be loosened, and, a week or two afterwards, finally removed. The shield and bud now swell in common with the other parts of the stock; and nothing more requires to be done till spring, when, just before the rising of the sap, they are to be headed down close to the bud, by an oblique cut, terminate about an eighth or a quarter of an inch above the shield. In some cases, however, as in grafting, a few inches of the stalk is left for the first season, and the young shoot tied to it for the protection from the winds." [*Encyc. of Gardening*.]

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### Culture of the Lima Bean.

[FROM THE YANKEE FARMER.]

Mr. Editor,—As this most excellent vegetable is of late years rarely brought to perfection in our country, I herewith subjoin a method I have followed to an excellent purpose in forwarding and raising a good crop of the Lima Bean, when the usual method has failed.

The method is simply to prepare a piece of good ground early in the spring, and continue to work it until the first week in June, when the plants may be set out.

The growing the *bean* is done by making up a slight hot bed about the 10th of May, which is to be earthed about 6 inches deep with light soil—on the soil the beans are to be sown about an inch apart, and lightly covered. When the beans are up, which will be in a few days, the frame must be given *air* to of a day—covered of a night, &c. About the first week in June the plants are to be dibbled in hills four feet apart, and poles given about eight feet in height, but no higher. The planting should if possible be done in rainy weather.

The ground between the rows should be well worked during the season, and the branches as they appear afoot in length *kempped* in to give strength to the vine and set the young pods early.

If this system is strictly followed I hope the produce of the Lima Bean will be much renovated.

A DOMESTIC GARDENER.

### Feeding Silk Worms

[FROM THE TENNESSEE FARMER.]

Mr. Editor,—I had from time to time intended submitting for the "Farmer" some observations on the culture of silk, with which I have been making some experiments for several years, but I find that subject receives its full proportion of attention in the Farmer; yet there are some results of my experiments, that I have not seen noticed by others; I have for several seasons raised worms on the mulberry trees considerably larger than any I ever raised in the house; thereby demonstrating (in my opinion) that the careful attention to "temperature," enjoined by old writers on the subject, is entirely unnecessary; and further, that worms cannot be *over fed*, if they are fed regularly. Again, by repeatedly feeding different parcels of worms in the same room, and on leaves of the white, and the common mulberry, also by raising worms on the two kinds of tree, I have become satisfied that worms thrive better, are more healthy, and grow larger, fed on the white mulberry leaves, than those fed on the leaves of the common kind; though I believe there is no difference in the silk. But I would not be understood to advise raising worms on the tree, they are subject to too many accidents.—They are destroyed by ants, spiders, bugs of two kinds, birds, &c., and they are very liable to fall off of the tree, and will scarcely ever regain it without help. Scarcely one in a hundred will escape all accidents, and come to maturity. Almost any kind of a shelter will answer, (except a close room) so they are secure from mice and ants, and have sufficient room. Close rooms and crowded shelters are fatal to the silk-worm.

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### Use of Lime.

[FROM THE FARMER'S CABINET.]

Lockhat, in his Life of Sir Walter Scott, relates the following anecdote.

'There see'—he continued, 'that farm there, at the foot of the hill, is occupied by a respectable enough tenant of mine; I told him I had a great desire for him to try the effects of lime on his land. He said he doubted its success, and could not venture to risk so much money as it would cost. Well, said I, fair enough; but as I wish to have the experiment tried, you shall have the lime for the mere carting; you may send to the place where it is to be bought, and at the term day you shall strike off the whole value of the lime from the rent due to me. When the day came, my friend the farmer came with his whole rent, which he laid down on the table before me, without deduction. "How's this my man; you are to deduct for the lime, you know." "Why, Sir Walter," he replied, "my conscience will not let me impose upon you so far—the lime you recommended me to try, and which but for your suggestion I never would have tried, has produced more than would have purchased the lime half a dozen times over, and I cannot think of making a deduction."' "



*Effect of Cultivation upon Climate.*

[From the Journal of the Franklin Institute.]

The question of the tendency of cultivation, and more especially the clearing of forests, upon the temperature of countries, has been much discussed, but without those definite results, which a subject of so much interest naturally claims. Until meteorological statistics shall be more diligently and accurately preserved, which there is reason to believe will be the consequence of an increasingly enlightened and expanding system of legislation, this question will not be solved with the desired precision. No country in the world, is more favorable to its accurate solution than our own. In one respect, the means are at hand of throwing much light on this subject,—namely—whether, within the observation of the settlers of our new countries, there has been any diminution or increase of the level of the water of lakes and ponds, and the quantity which flows in rivers which can be ascribed only to the effect of clearing and cultivation.

In a memoir on this subject by M. Baussingault, a translation of which appears in Jameson's Edinburgh Journal, January 1838, facts are detailed from which the author draws the following conclusions:—

1st. "That the extensive clearing of a country diminishes the quantity of running water which flows over its surface; 2dly, that it is impossible for us to determine, at present, whether this diminution is owing to a smaller annual quantity of rain, or to an increased evaporation of the surface-water; or to those two causes combined; 3dly, that the quantity of running water does not appear to have varied in countries which have not been subjected to any changes arising from the progress of cultivation; 4thly, that, independent of the preservation of surface water, forests husband and regulate their flow; 5thly, that cultivation, when established in an arid country, which is not covered with forests, dissipates a portion of its running streams; 6thly, that, in clearings which are purely local, springs may disappear, without there being any ground to conclude that the annual quantity of rain has diminished; and 7thly, that drawing our conclusions from the meteorological facts collected in equinoxial regions, we may presume that the extensive clearing of a country diminishes the annual quantity of rain which falls upon it."

M. Baussingault enjoyed extensive opportunities of observations in South America as well as in Europe. No traveller since the time of Humboldt, has turned to a better account such opportunities in connexion with the resources of science. He cites the following, among other cases.

"Oviedo,\* who, towards the end of the fifteenth century, so often traversed the valley of Aragua, positively affirms that New Valencia was founded in 1555, at the distance of half a league from the lake of Tacarigua; and M. de Humboldt found, in the year 1800, that the town was more than three miles (2700 toises) distant from its banks. The aspect of the district exhibits additional evidence of a great change. The rising grounds, which are somewhat elevated above the plain, maintain to the present day the name of islands, which at a

\* His *Historia de la Provincia de Venezuela*, was published in 1823.

former period, was most accurately assigned to them, seeing they were surrounded with water. The space which has been exposed by the retreat of the waters has been transformed into most fertile fields for cultivation of cotton, sugar-cane and the banana tree. These buildings which were reared in the immediate vicinity of the water are seen to be more and more forsaken by it. New islands made their appearance in the year 1796. An important military post in the shape of a fortress, which was built in 1740, in the island of *Cabrera*, is now situated on a peninsula. Lastly in two islands of granite, those, namely, of *Cura* and of *Cabo-Blanco*, M. de Humboldt discovered, among the bramble bushes, several yards above the level of the water, deposits of fine sand, containing many *helicites*. Facts which are so speaking as these and with all so well ascertained could scarcely fail of exciting the ingenuity of the learned on the spot, in the way of supplying explanations of the remarkable change; and they all agreed thus far, that some subterranean conduit had been opened up, which allowed the waters to flow freely to the ocean. M. de Humboldt, when on the spot, paid all due regard to this supposition, and after an accurate examination of the localities, came very decidedly to the conclusion, that the cause of the diminution of the waters of the lake of *Tacarigua* was nothing more than the extensive clearing away of the woods, over the whole valley, during the course of the former half century. "In laying low the trees," he observes, "which covered the tops and flanks of the mountains, mankind, in all climates, are, at one and the same time entailing two great calamities upon succeeding generations; they are producing a scarcity both of wood and water."

Since the time of Oviedo, who, like all the older chronologists, is perfectly silent concerning any subsidence of the water of the lake, the cultivation of indigo, sugar, cotton, and cocoa, had been carried to a great extent. In the year 1800 the valley of *Aragua* maintained a population as dense as that of any of the most populous portions of France. The smiling prosperity which existed in the numerous villages which teemed with its industrious population, could not be witnessed without the greatest satisfaction. Such was the prosperous condition of this charming country when M. de Humboldt was sojourning in *La Hacienda de Cura*.

After a lapse of twenty-two years, it was my lot afresh to visit the valley of *Aragua*. I fixed my residence in the small town of *Maracay*. I soon found that, for many years, the inhabitants had been remarking not only that the waters of the lake had ceased to subside, but on the other hand, they affirmed they were very decidedly rising. The lands which had been formerly occupied in the cultivation of cotton were now submerged. The islands of *Las Nuevas Aparecidas*, which had risen above water in the year 1796, had now become shallows, which were dangerous for navigation. The tongue of land near to *Cabrera*, at the northern side of the valley, was now so narrow that the smallest rise in the lake altogether inundated it; and a steady breeze from the northwest was sufficient to submerge the road which led *Maracay* to *Nueva Valencia*.

The fears which for so long a time had annoyed the inhabitants on its banks, were now altogether changed in their character; and they no longer dreaded the entire disappearance of the lake. They were now anxiously considering if these successive invasions of the rising waters were about to overwhelm their properties; and those who had

explained the previous diminution, by the existence of subterranean canals were convinced that they were now choked up, and that nothing would save them but opening the conduits afresh.

During the two-and-twenty years which had intervened, important political transactions had occurred. Venezuela now no longer belonged to Spain. The smiling valley of Aragua had been the arena of the most bloody contests, and war and death had desolated those happy scenes, and greatly reduced the population. On the first cry of independence, a number of slaves obtained their liberty by fighting under the standard of the new republic. Its wide spreading cultivation was neglected; the forest trees, so luxuriant within the tropics, had again in a great measure usurped dominion over that region, which its inhabitants, after a century of constant and painful labor, had reclaimed. During the growing prosperity of the valley of Aragua, the numerous streams which had fed the lake had been arrested and employed in innumerable irrigations, and their beds were found dry for more than six months of the year. At the last epoch to which I have alluded, the streams being no longer so diverted flowed without interruption. Thus, then, during the progress and continuance of agricultural industry in the valley of Aragua, when the process of clearing was pushed farther and farther, and when cultivation in every shape was advancing, the level of the water gradually subsided. More lately, on the contrary, during a period of misfortune, and we would fain hope, but temporary, when the clearing was no longer continued and the cultivated lands have fallen back into their wild state, the waters having ceased to fall, and are now very speedily assuming a decided rising movement.

I shall now direct my remarks to another quarter, without however leaving America, in which we find a climate analogous to that of Europe, and where we traverse immense districts producing the most valuable grains. I shall direct attention to the higher lands of New Grenada, and to those elevated valleys, from 6000 to 9000 feet above the level of the sea, which enjoy, throughout the year, a temperature of from 58° to 62° Fahr. Lakes are frequent among the Cordillras; I might easily dwell upon many of these, but shall bring under review only those which have been the subject of previous observation.

The village of Ubata is placed in the vicinity of two lakes. It is an important fact that, sixty years ago, these two sheets of water formed one only. The older inhabitants have observed the waters gradually diminish, and their shores extend themselves year after year. Fields of corn, of the greatest fertility, at the present time cover districts which thirty years ago were completely covered with water. The falling of the mean level of this lake will the more readily be credited by the consideration, that an occasional fall of three or four inches lays bare a great extent of surface. If we inquire in the neighborhood of Ubata of any of the old men, who in their younger days were devoted to the chase, or if we examine the records of any of the different parishes, no doubt will remain that numerous forests have been felled. The clearing still goes on; and it is equally certain that the retreat of the water has not ceased, though it does not advance so rapidly as it was wont to do.

It is hoped that such of the readers of the *Journal of the Institute*, as may have the means of obtaining correct information on a question of this nature, in the interior and particularly in the more elevated

regions of the United States, will not neglect the opportunities they enjoy, and that the facts which they obtain, may be given to the public in that, or some other Journal, so as to serve the purpose of accumulating evidence in relation to the meteorology of our country.  
G.

*A guide to the Purchasers of Horses, with Directions for the Feeding, Equipment, Riding, &c. Compiled by P. YORK.*

[A late English Work.]

It is proper to mention, that much of what follows is from the writings of Taplin, the celebrated Newmarket Jockey, as modernized by the Author of "Hints," &c.; from the Treatise "On the Horse," published by the Society for the Diffusion of Useful Knowledge—by far the most complete, and admirable work that ever appeared on that noble animal;—and that White—Percival—Blaine—Hinds Osmer—&c. &c. have been consulted. Besides this, the Compiler is under the greatest obligations to Mr. James Buchanan, Younger, of Catrine—to Mr. M'Kinnon, and other gentlemen who have both theoretically and practically studied the subject—for numerous suggestions. The "Hints on Equestrian Equipment," so much approved of in the first Edition, filled up, for the first time in print, a blank that the young Horseman could not but feel had been but indifferently supplied by conversational remarks.

READER! there are so many good horses of comparatively different shapes, and so many, which, possessing the same useful properties, are widely different in general appearance, that it would be difficult to single out any particular horse, (a malformation in front being often accommodated, and its evil effects counterbalanced, by a peculiarity in the rear,) as the standard of perfection.

Attention to the following *points*, however, which are indispensably requisite to form a perfect animal, will enable those who are fond of a horse, to judge with some degree of accuracy of his goodness.

POINTS REQUISITE TO FORM A PERFECT HORSE.

*The Head.*—The head should be small, and free from fleshiness; not projecting in front from the fore-head downwards, (which is called *Roman-nosed*) but, rather hollow in that part, though to be too much so is indicative of soft temper and delicate constitution; then—it should be wide across the fore-head, breadth there bespeaking courage, and taper towards the muzzle, which last should be small and thin. The bottom jaw should be wide underneath at the junction with the neck, so that the gullet may not be confined. The nostrils should be large and open, and the ears long, though not too much so, but well tapered and *small looking*; the eyes should be lively, clear, full and bold, and well placed towards the front of the head.

*Neck.*—The neck should be light, clean, and hollow at the throat, and so arched as to permit the passage of the air from the nostrils to the lungs without the difficulty which an acute turn presents; the crest firm and arched at the top just behind the head, and strong and muscular at its union with the shoulder.

*Shoulder.*—The shoulders should rise, and run well into the back, so that, when the animal is mounted, the rider's toes may be behind



its forelegs. The withers should not be too thin, but strong; though quite smooth, and free from lumps on each side: the points of the shoulders, most particularly, should be light, and nicely rounded off. The bosom should not be heavy, and prominent, nor yet narrow and confined.

*Back and Body.*—The girth should be wide and deep, and spreading more so between the fore-legs, which causes the girth-strap to lie well back. The loins should be broad, and rising on each side of the spine; but the back-bone itself should not be high, which is to be what is called *roach backed*.

The body should be deep, and round in the ribs, not falling away in width at the heart, else the saddle will never keep its place. The hips should be quite smooth, and the space very long from them to the root of the tail, which should be almost in a straight line with the back—the higher set the better, as it indicates breeding; but many of the best cattle have a rise between that and the back (or loins); and a proper curve from this point to the saddle marks speed in the gallop.

*Thighs and Hind-legs.*—The thighs should be large and muscular, and continue so to the hocks, which should be large, lean, bony joints; and the leg should be short from thence downwards, though to be too much so causes liability to sprain, and curbs, &c. It is generally observed that horses that are long—or, as it is called, “Hare houghed”—even to a degree disproportionate to the eye, are remarkably speedy. A horse ought to stand fair on his legs, and does so when in front his fore-feet legs intercept the view of the hinder, and the reverse. The hind legs should stand well under the *top* of the animal, and not with the hocks bowed out behind him.

*Elbows and Fore-legs.*—The elbows should stand square, not jammed into the chest, nor yet inclining outwards. The arms should be large, and muscular, like the thighs, but should taper in a shapely manner towards the knee. The knees should not be great flat joints, and not recede from the straight line of the leg, (which shaped is called *calf-knee'd*.) The legs should stand straight, not twisted in, nor out at the ankles. The space between knee and fetlock cannot be too thick, too short, or too flat; and so clean, that you may see, or at least feel the *suspensory ligament*, as it is called, clear and distinct to its roots.

*Pasterns.*—The pasterns should not be small in circumference, nor very long, and bending, as it were, with the animal's weight; nor yet should they be short and upright, but partaking of the pliability of the former shape, with the strength of the latter.

*Feet.*—The feet should be round, and wide at the heels; the frog large, and sound; and the sole concave.

Yet, possessing these perfections in shape, a horse is of no value unless a good mover; and a plain horse, when a good goer, is far preferable to a fine shaped one, with middling action. This leads next to the mention

#### OF THE PACES OF THE HORSE.

*The walk.*—A horse, in his walk, should begin by stepping boldly away, with the knee well bent. The foot should be brought down flat, and the heel, if any thing, first; with his hind-legs tucked close, and following his fore-legs regularly: he should not go with a hind and fore-leg of the same side at a time, (which pace is termed *ambling*.) but in exact and well-timed motion.

*The Trot.*—The same is to be observed in his trot; the knee should be bent, and the foot up, and sent straight forward, not dashing out or in on either side. The motion should be from the elbow, as well as the knee, for horses that step from the knee alone, soon tire themselves and are always slow, putting the foot down nearly in the same place from where it was taken up. A Bart. of sporting celebrity, Sir L. P. G——n, used to term them “daisy cutters.” The hocks also should be tucked close together, and go well under the animal, with the same regularity mentioned as requisite in the walk. The fore and hind-legs should go together, and not *at twice*, as if the animal had a joint in its back. It should have no rolling motion but a steady swim! In hunters, with a thorough horseman in the saddle, first-rate fore-legs are not so essential as perfect hinder ones.

Observe, in all good trotters, the rider can see the knees at every step without leaning forward in his saddle.

*The Gallop.*—A horse, in his gallop, should not go high, and *fighting*, with his knees too much bent; nor should his fore-legs be confined; they should be put boldly forward, not *pattering*, nor *romping*, nor *scrambling*, but clear and straight away from the elbow; with the hind legs thrown well under him, and not lolloping after him, making him *go all on his shoulders*. The gallop is a pace more used in the field than on the road, and hunters are chosen more with reference to it, than either to the walk or the trot. Speed is quite indispensable for a hunter; and when hounds are running fast, while a slow horse is *killing* himself by going at the *top of his pace* all the time, and consequently at the utmost stretch and exertion, a fast horse is going *within himself*, and without either trouble or distress.

Long slow stepping horses never go well through deep ground; and they are equally bad across ridge and furrow. Those that roll in their gallop are the same. Horses to *live* across a country, should go with quick collected steps; they can then get through dirt, and over ridge and furrow, and can jump at very short notice.

In the gallop, and indeed in all paces, good use of the hind-legs is absolutely necessary; for from these all the spring is made; and no horse can possess either speed, safety, or strength of action without it.

*Cutting.*—Here, be it observed, a horse in all his paces should go clear, and not cut, or touch one leg with the other. He cannot go too near if he does not *cut*. Those horses *cut* before that hook in their heels; when *low actioned*, and in their slow paces, they hit their ankles; and when high goers, and moving fast, they hit their knees; sometimes they hit midways, on the *splent bone*, between knee and ankle. Nothing is more objectionable than such interfering action; the wounds it inflicts create always of necessity inflammation of the leg; and it frequently occasions a horse to fall very suddenly. Cutting with the hind-legs, though not of such consequence as with the fore, makes the joints large, and weakens them by the repeated sores it occasions. It results either from the hocks being open and wide apart, in which case the toe comes in contact with the ankles; or from the hocks being inclined too much inward, in which case the end of the heel does the mischief. There are very few horses that do not hit their hind-legs some time or other; particularly when young, and weak, and often when weary with long or great exertion; and often too, though the cause be little suspected, from weakness in the back. But observe, those that cut from natural causes, either behind or before,

never receive any permanent benefit from an alteration in shoeing; which method of remedy unavoidably curtails the natural size, and alters the natural shape of the foot, and not only does not remove the imperfection, but, if persisted in, occasions lameness in addition. Palliations are, however, often possible.

Those horses that *dish* the foot outwards, never cut their fore-legs; and though some judges do not consider such method of going to be perfect action, it is by no means always very objectionable.

It is particularly desirable that a horse in all his paces be a quick stepper, and that he go very lightly with his fore-legs, but hit the ground hard with his hind-legs; or, to use a horse-dealer's phrase, which is, of course, greatly exaggerated in expression, he ought to strike hard with his hind-legs, and tread on eggs without breaking them with his fore ones.

Horses with quick light action, seldom wear their legs out, if they are not used when too young, which will ruin any horse; and the reason of their lasting is, that they do not hammer the ground, and shake themselves to pieces, which heavy slow movers do, but, going free of all concussion, they do their work without detriment to themselves, and with pleasure to their riders.

But action is in a great degree referable to the position and make of the shoulders. For example, in the first place, when the shoulders are low and upright, the weight the animal carries is directly upon his fore-legs; it is not then to be wondered at, that he experiences difficulty in using them lightly; and as, instead of being *from him*, they stand quite under him, he has equal difficulty in putting them forward. He is therefore evidently more liable to stumble; and when he does trip, the load he carries being more forward than his fore-legs, prevents him recovering himself, and down he comes! When the shoulders are themselves loaded at top, as well as upright, there is a double imperfection; for then there is a natural weight, as well as the artificial weight; and when they are loaded at the points, they occasion great heaviness of action, and, if the animal is a high goer, he hits the ground so much the more forcibly; the objection to which has been already stated. Horses with bad shoulders may go well for a short time; but after six or seven miles' journey, they begin to *make mistakes*, and as their shape is not calculated for movement, so their action cannot continue.

Though the fore-legs, from their situation, must always bear the greatest portion of weight, yet, when the shoulders lie back, more of the weight is communicated to the spine; and being thus removed from the fore-legs, they have less impediment to motion, and their position being then forward, is naturally more favorable to the office they have to perform; for the slope of a horse's shoulder may be called the measure of his stride.

Good action may be considered as equivalent to strength. This is confirmed by the fact of many horses with great substance, when bad goers, failing in their joints; while slighter horses with good action are seldom found to give way, even carrying the same weight.

*Color.*—There is an old saying, "a good horse is never of a bad color;" yet a *whole colored* horse that is, without white, is esteemed the best. Mealy-colored horses are mostly soft, as are blacks, and very light chestnuts, with much white about them. Rather a horse with a white stocking than a white foot! the one being the natural color of the leg, the other often, especially when the hoof even has

black and white in it, arising from a natural weakness of the parts, and feet of this sort being more liable to get thin and contract.

*General Indications.*—A great body large sheath, and small head, indicate a good constitution; and a great head, and light body, the contrary. An experienced person can tell a soft horse, or a hot one, in a great degree, by the expression of the countenance; there is a great deal evinced in the head, which experience alone can enable you to discriminate with advantage. In short, there is in the horse a sort of knowing physiognomy, marking distinctly his character as to courage, &c., which with all the rest right, hardly ever deceives a judge.

*The Mouth.*—Another indispensable requisite is, that a horse have a good mouth. Yet this really does not depend half so much upon the mouth itself, as upon the neck and its junction with the head and shoulder. First it is requisite that the top of the neck, behind the ears, be rather arched, and the throat underneath hollow, and free from fleshy substance: the head then is placed in a situation to bend inwards; but if the top of the neck be straight, and without the curvature, there is no natural disposition to bend; and if, at the same time, it be stopped up at the throat, how can it be acted upon by the bridle? it must remain fixed; and the chance of stopping a horse with such a neck, is at the animal's discretion, not at the will of the rider. The junction of the head and neck should never form an abrupt angle. A finely curved gullet is both symmetrical and a good mark to judge by of a horse's power of duration, as to wind, &c.

It is no less necessary that the neck be muscular at its union with the shoulder; for here it should resist the action of the bridle. It is only required that a head rein well in to make a good mouth; and that is effected by the shape just described. But if the neck be weak at the shoulder, it gives way the moment you pull at the bridle, and up flies the head into the air, and the ears into the rider's mouth: and if he try to stop the horse in his gallop, particularly down hill, the head will be pulled quite on one side, before he can make any impression upon the animal. This sort of neck, weak at the shoulders, and without the curvature at the top, is what is termed a *ewe-neck*, and is objectionable in point of utility, though all very fleet horses are more or less so, as it is in appearance in cavalry horses.

Horses with such shape are obliged to be ridden in martingals, in order artificially to produce the effect of dropping the head to a governable situation. They are particularly dangerous in the field where good mouths are most essential; because when without martingals, they cannot see where they are going, and are liable to fall at every hedge, ditch, and furrow; and when ridden with them, they are always in danger of being pulled down upon the fences. A martingal is often very useful, and, properly put on may be comparatively safe, but this is rarely the case. It ought always to be so long as to allow (at a reasonable height in the horse's head) a straight line in the rein from the bit to the rider's hand, and should merely be a steadier, nothing else, and never allowed to dangle for show between the fore-legs. Nine cases in ten it is used when a bad hand has so fretted the animal's mouth as to endanger the rider's nose. The best bit for a good or bad rider is a curb snaffle; with it the mouth is not so much injured by a bad hand as with a double bridle, and it is certainly the pleasantest of any, with the additional advantage of simplicity, and plenty of control in a good one.



When the formation of the neck is such as it ought to be, the head is so placed, that it is next to impossible the mouth should be bad; and though there are horses that do not answer the bridle on one side of the mouth, this is the effect of having been improperly bitted at first, and may, if the animal be young, be easily remedied by a judicious application of the breaking bits.

It is absurd to imagine, that by placing a sharp piece of steel in the mouth of a horse, you can bring his head into a situation different from that in which nature has placed it, and to which, from the muscular conformation of the neck, it refuses to submit; you may place it under temporary restraint by such means, in the same manner that your own body, or any part of it, may by some circumstance or other, be subjected to an unnatural position; but as it is painful to you, so it is to the animal; and on that account we so frequently see the mouth bleeding under the influence of such severity; if the one could yield the other would; the poor animal always gets the blame, however undeserved; the fault is never in the rider.

It is not but what different bridles may be useful for different sorts of horses, and even sharp bits necessary, but it is impossible to make the mouth good if the head is placed on to the neck, or the neck united to the shoulder improperly. But if the defect be not of a kind that pervades the whole structure of the parts, judicious restraints, at particular points, may, by causing certain muscles to contract while others expand, produce great improvements in habits and even in form, just as we see military drill change a stooping lout into an erect recruit. There is no mistaking the gait of the old soldier.

A rider with what is commonly termed a *good hand*, can accommodate the feeling of the mouth, so as greatly to soften down, or rather improve, a bad mouth.

*Temper.*—The temper or disposition of a horse is an important consideration.

A horse should be perfect docile, and free from vicious propensities. He should possess courage and mettle, without being hot, violent or nervous. A vicious horse is generally distinguished by the expression of his eyes, which instead of being fixed upon objects before him, are constantly glancing backwards, as if the animal was intent upon, or watching the motions of the rider, or persons about him.

*Hot horses.*—Are objectionable, because they are unpleasant to ride in company with others, and generally fatigue themselves by their constant and excessive irritability. They very often refuse their food after work; and when in the stable listen to the least noise, particularly after hunting; and the sound of a horn, the crack of a whip, or the barking of a dog, throws them into a state of great agitation. Many horses of high courage are rendered hot by injurious treatment.

*Dull and Sluggish horses.*—May be tolerated; though if without any mettle whatever, they are generally good for nothing; and it is less fatiguing to walk, than to ride them.

Some do not object to a horse rather lazy on the road for a hunter, because the cry of the hounds, and the company of other horses, exhilarate him sufficiently, while pursuing the sport, to render the constant application of the spur unnecessary.

A warm hackney is pleasant to ride a journey on the road, or to go a distance. He may fidget, and pull for the first mile; but afterwards

his warmth subsides into freedom of going, and there is nothing required but a still seat, and a steady hand on the bridle.

These are the only exceptions to be made in favor of either sluggish or warm-tempered horses.

*Shyness.*—Many horses are shy, and cringe when you approach them in the stall; they also dislike being handled, particularly about their heads. This shyness results more frequently from their having been treated harshly, than from any natural timidity. Persons employed in the management of young horses, too often get out of temper with, and abuse them; and for want of a little patience many are for ever spoiled.

*Starting.*—There are other horses that are subject to start, and jump out of the road at the sight of any new object. They are often rendered worse by bad riders, who whip and spur the animal the moment he takes fright; the consequence is, that when any thing unusual presents itself, they are not only alarmed at the object itself, but are terrified at the recollection of the treatment they have on similar occasions received. The best method to improve a shying horse is to give him the habit, as soon as he observes any unpleasant object, of turning his head away and getting him past as safely as possible; this method I have always found mend his manners. The best hackney I ever crossed, on first coming out of the stable on a frosty morning, I have frequently been obliged to wheel round and back up to the object of terror—often a little hoar frost on a stob or end of a hedge.

Having thus briefly shown what is requisite to constitute a good horse, a few useful directions to purchasers, will facilitate the examination of the animal, and render the buyer less liable to be imposed upon by the studiously advantageous manner in which horses are usually exhibited.

#### DIRECTIONS TO PURCHASERS.

Of course every man wishes for a sound horse, without defect in wind, limb, or sight. The various imperfections which occur in each of these are afterwards enumerated.

*The Eyes.*—When the animal about to be purchased is at the stable door, before he is brought out examine his eyes; the light coming upon them in that situation will enable you to discover any defect that may exist. Remember both eyes must be in an equal degree of light; and regarding this, observe that there is no difference in the eyes, for if they be not alike, one must be diseased. If both eyes be clear, and hazel round the pupil, and the pupil itself be blue, and free from any white specks; if it contract in the light, and dilate when in the shade, you may conclude that the eyes are good. If the eye be blue round the pupil, or the pupil itself be in the least degree affected with external specks or deep-seated pearly whiteness, termed cataract; if it do not diminish, or enlarge, as the light is more or less upon it, in all these cases it is a defective eye. All weeping, cloudy, dull-looking eyes are unsound; and if there be the least appearance, in any way, of disease in this very important organ, reject the animal. Imperfect vision is often the primary cause of shying.

*The Age.*—Next examine the mouth to ascertain the age. Yearlings and two year-olds are alike in mouth, and must be judged by general appearance. At three years old, the horse has four horse teeth, two above, and two below, in front of the mouth, which supply the

place of the sucking teeth. At four he has eight horse teeth, four above, and four below, the corner being only sucking teeth. At five years old these are gone, and the *mouth is up*, at least with the exception of the *inside* of the backmost teeth, which, especially in mares, sometimes do not rise till the sixth year; that is, all the teeth are horse teeth, and the tusk is up on each side of the mouth. A dark mark, or hollow, is generally observable in all the teeth in the bottom jaw at five years old; and the tusks are concave in their inner surface. At six the two middle teeth have quite lost this mark, and the tusk is higher up, and longer and not so concave. At seven the next two teeth have lost it, and the corner teeth only have the mark left in them. At eight, it has grown out of these, and no mark is left at all. The tusks also become longer, and instead of being concave in their inner surface, become convex; the horse is then termed aged. There is however a great deal of difference in the mouths of horses: some have lost the mark in all, except the corner teeth, even as early as five years old; others have the front teeth in the top jaw, projecting over the bottom teeth, at the same age. You may form some idea of the age from the appearance of the mouth in general, when the marks are no longer visible. If the corner teeth do not appear long and running forward as it were, to the front of the mouth; if they retain their square shape and shut well together; if the tusks are not blunt, and have the least concavity in their inner surface, you may conclude that the horse is not very old, particularly if his head be not gray, and not very hollow above the eyes; though this latter shape sometimes exists in young horses. A concave tusk is the most certain criterion of youth; and as mares have no tusk at all, they must be judged with reference to what I have said about the corner teeth, except in some cases of what are called "shell teeth" from their resemblance to the plate-like cakes of shells, and horses with these preserve the appearance of youth till 10 or 12 years old. It is here necessary to mention, that the difficulty of acquiring an accurate knowledge of the age of horses by their teeth, is very much increased by the tricks that are practised.

It is generally allowed that no horse is fit for work till at least five years old; and it is a common custom with great breeders in the north of England and with many dealers, to pull out the sucking teeth when the animal is rising four years old; the mouth is *forced* by these means, for the horse-teeth succeeding soon after the operation, the animal appears to be a five-year-old. To detect such deception, regard must be paid to the tusk. Every horse, upon attaining the full age of five, has the tusk completely up on each side of the mouth; but in forced five-year-old mouths the tusk is only just making its way through the gums. There frequently exists also in the latter an irregularity in the front teeth, as well as a backwardness in the growth of the tusk. Forced mouths vary in their appearance according to the time of performing the operation; and the habit of observing horses' mouths will alone enable you to ascertain where any artifice has been practised.

*The Jugular Vein.*—Mark that both jugular veins are perfect, and that a free circulation through them exists; as there are horses, which from having been unskillfully blooded, and from subsequent inflammation, have *lost the vein*, a defect of some consequence.

*The position.*—When a horse is brought out, allow him to be placed with his fore-legs up hill; because if his joints be at all *bent over*, or his legs shaken, you will best discover it by such position. Whenever the animal is placed with his fore-legs in a gutter, or down hill; or

whenever the person showing him is continually pulling at the bit to make him shift his legs, that he may stand advantageously, be assured that his joints are impaired, and that he cannot stand firmly.

**Knees.**—As the horse stands examine his knees, and ascertain that no marks exist in front of them. These marks are generally the symptoms of his having *been down*, and even were they occasioned by other means than falling, the blemish is the same, and almost equally detracts from his value. Next look inside the leg just under the knee, and if any scars be visible, or the hair stick up, you may conclude that he cuts in his speedy, or fast paces. Mark well that a similar scar do not exist at the ankles, or the hair appear *brushed*; for such marks are solely produced by the act of cutting, which as before observed, is generally a natural, and therefore incurable defect in action.

**The Legs.**—Take notice that the legs be not *totering*, and inclining forward either at the knee, or the ankle; and that the ankle-joints be large in front. The back sinews, also, should not appear bowed out behind, nor feel thick, the symptoms of their having sustained some injury. The legs should be flat, and not round; neither should they feel soft and puffy; but *wiry* and hard. Both legs should be alike; for if one be larger than the other, it is an injured leg. Never buy a horse for a sound one, with a big leg, even though he be *warranted*. You need not mind a splent, or bony excrescence on the shank, unless it be so situated as to interfere with the suspensory ligament, or project so much as to be hit with the other leg in going. *Ringbones*, or enlargements on the pasterns and coronet, are easily perceived from a difference in the two legs; as it rarely occurs, even when both legs are affected, that they are affected equally. Incipient ring bones will sometimes produce lameness, even before they are very observable.

**The Feet.**—Be particularly attentive to the feet; for according to the old saying, *no foot, no horse*. First of all observe that one foot should not be less than the other; and that they should not be indented, or hollow, round the *crust*. The crust itself should not be brittle, and broken where the nails have been driven; nor should there exist in it any circular cracks, or longitudinal fissures from the coronet downwards, which last are termed *sandcracks*. The heels should not be drawn together, and contracted; nor should the frog be small and ragged, nor discharge a fœtid matter, which is a disease called a *thrush*. The horn at the heels should be as high as the frog; for if lower, the heels will be liable to *corns*; and the sole should neither be flat, nor convex. It is obvious no horse can continue sound with those imperfections in the feet; and it frequently happens that horses with very finely-formed feet, are very lame from a hidden cause within the hoof. Some veterinary surgeons consider such description of foot-lameness hereditary. Lameness in the feet (often erroneously taken for, and called, lameness in the shoulder,) frequently proceeds from slight sprain in back tendon, which, on inflammation falling down to the sensible sole, produces *navicular* disease, only curable by an operation and which fortunately is a simple one, in really scientific hands, seldom failing to give relief. If the legs and the feet be *smooth*, you may imagine that all is right in the fore part of the horse.

[To be continued.]



## PART III.

### MISCELLANEOUS INTELLIGENCE.

**Gleanings.—Economical use of Manures.**—Mr. Parkinson asserts that one great advantage of the drill husbandry, consists in putting the manure into drills, and that four loads of manure, thus applied, is equal to sixteen loads in the usual way of spreading it broadcast. He alludes, of course, solely to the crop to which it is applied, as no possible way by which so small a portion can be applied, could it exercise an extensive influence on subsequent crops.

**Lime.**—Darwin says that one great use of calcareous earth consists in uniting with the carbon of the soil in its pure or caustic state, or with that of vegetable or animal recements during some part of the process of putrefaction; and thus rendering it soluble in water, by forming a hepar carbonis, somewhat like a hepar sulphuris produced by lime and sulphur, by which process carbon is rendered capable of being absorbed by the lacteal vessels of vegetable roots.

**Marl.**—Anderson gives the following strong fact, illustrative of the good effect of marl. He states that a piece of land on which a thick coat of shell marl was laid, bore good crops for forty years, without additional improvement.

Quincy describes it as a kind of clay which is become fatter, and of a more enriching quality, by a better fermentation, and by its having lain so deep in the earth as not to have spent or weakened its fertilizing quality by any product; that it is much of the nature of chalk, and is believed to be fertile from its salt and oily qualities.

Hill understands by the term *marls* simple native earths, less heavy than clay; and

Child affirms that, marling to improve the soil, is of very ancient date.

Crabb delineates it as a fat earth, consisting of clay and the carbonite of lime, in which the latter prevails, and as being particularly useful as manures in barren land.

Bacon says marl is the best compost, as having most fatness, and not heating the ground too much.

The very meaning of the word signifies *marrow*, or the fatness of the earth, which was doubtless derived from its meliorating tendency as a manure.

**Soot.**—Says Sir Humphrey Davy, doubtless owes a part of its efficacy to the ammoniacal salts it contains.

As a top dressing for turnips or grass lands, there is nothing superior to it:

**Ammoniacal Liquor.**—The same author asserts, that the liquor produced by the distillation of coal, contains carbonate and acetate of ammonia, and is said to be a very good manure; and in corroboration of his assertion, states that in 1808, he found the growth of wheat at Rochampton assisted by a very weak solution of acetate of ammonia. We conclude these premises, that the ammoniac liquor, which is daily drawn off and wasted, at gas generating establishments, would be a most efficacious ingredient in all composts, and that where convenience and distance justified the haling of it, it would be found eminently useful for almost all the purposes of agriculture.

**Salt.**—Sir Humphrey Davy says, that common salt, in small quantities is a useful manure.

Sir John Pringle, in giving its *modus operandi*, asserts, that in small quantities it assists the decomposition of animal and vegetable manure.

Sir Humphrey Davy further remarks, that the refuse salt in Cornwall, which contains some of the oil and *exuvia* of fish, has long been known as an admirable manure,—Farmer and Gardener.

*Disease of Rye.*—We have seen two fields of rye this season very much injured by a small black worm. The rye last week presented the appearance of being premature by ripe—having a sickly yellow appearance—the leaves or blades dead—the stalks disfigured with light brown spots, resembling rust or oxide of iron—the heads shrivelled and deadly and the grains half formed, feeble and unhealthy. We are very sorry we were unable to learn more of this disease, than the opinion of a laborer that it was produced by a small black worm which he saw in numbers, committing its depredations in the head or ear of the grain. The two fields to which we allude, are owned by the same person, though 12 or 15 miles apart. We shall endeavor to investigate the subject further, and hope others will communicate any information in regard to a similar affection of the rye crop. We have not heard, however, of another field similarly injured; and indeed we may say that the rye crop generally, is unusually good.—*Ten. Franklin Farmer.*

Give hens burned bones, lime, gravel, &c. that they may have some material for forming egg-shells.—*ib.*

A Virginian informs us that a friend of his cured a valuable cow in the last stage of the bloody murrain by simply giving her two doses of sugar, of a pound each, mixed with water.—*ib.*

*Live Oats.*—The Yankee Farmer gives an account of a species of oats (*avena sensitiva*) which have all the appearance of insects. The seeds are covered with a stiff down, and have appendages somewhat resembling the legs of an insect with joints. These joints are so sensitive as to be affected by the slightest change of the weather, and of course are continually moving. When wet they will turn over and twist about like an insect in the greatest apparent agony.

*Striped Bug and Turnip Flea.*—At this season our melons, cucumbers and other vines, are liable to be destroyed by the striped bug, in a few hours, and our young cabbages, radishes, turnips, &c. are liable to a similar fate from a small black flea. On visiting our garden a few days since, after several wet and cloudy days, we found many of our young vines, then in the first leaf, literally covered with the yellow bug, and our young cabbages also in the first leaf, in a fair way of being lost, in a few hours, by the black flea. We immediately sprinkled lime upon the vines and plants, and on the former took pains to put it on the under side of the leaves, and thereby saved our plants. Mr. Gordon in the Tennessee Farmer, gives the assurance, founded on repeated experiments, that the sowing of two or three bushels of wheat bran, upon an acre of young turnips, will effectually secure the crop, as the fly prefers the bran to the turnip.—*Cultivator.*

*Cure for the Dropsy.*—The following article comes to our hand from a most respectable source, and we strongly recommend it to the attention of our readers.—*Salem Gazette.*

Extract from a letter written by a very intelligent and respectable man, dated in Maine, April 5, 1838.

"I am knowing to two extremely distressing cases of Dropsy being suddenly relieved by the means of the bark of common elder. One a woman advanced in years, in the last stage of the disease, who lost a brother a short time previous, by the same disease. The other a young woman who had been confined to her bed, for nearly twelve months, (four of which previous to January last she was unable lie down,) and whose strength was nearly exhausted, is now wholly free from dropsy and recovering strength in a manner surprising and unexpected. Other cases less aggravating have been cured by the same. The Recipe is—"Take two handfuls of the green or inner bark of the white common Elder, steep it in two quarts of white Lisbon wine, twenty-four hours, take a gill of the wine in the morning, fasting, or more if it can be borne; or if more convenient, in the morning and part about noon, on an empty stomach. The effect of the bark prepared as above, or the pressed juice from the leaves (full grown) which had been used with success when wine could not be procured, is, that it promotes all the animal secretions necessary to health, which is the cause of its salutary effect in dropsy. Great debility will always follow the use of powerful evacuates, and the best medical writers now recommend *nutricious aliment* as the best medicine in every, even in extreme cases of debility. The bark and leaves of the elder have been long known as powerful evacuates, and not esteemed unsafe. Yet caution is recommended in using the buds, as their effect is esteemed and has been found dangerous in some cases.

*Tea a Remedy for Poison.*—MR. EDITOR,—At this season [May] when sheep and even neat cattle are greedy after green substances and vegetables, they are apt quite often to eat that which proves mortal to them; and as a little information upon this subject oft times saves many lives and much property, I hasten to give you a sure remedy against the fatal effects of "Indian Poke," or "American Hellebore," (*Veratrum Viride*,) after it has been eaten by sheep, (and I know not but the good effects of the remedy are the same in neat cattle,) which was told to me a few hours ago. It is so simple and cheap that it is within the reach of every one to try it.

As soon (says my informant) as you find that sheep have eaten something that is poisonous, give them a cup of strong black tea, and it is a sure cure, and no mistake. He said that he had lost some of his sheep before he knew any thing about the above remedy; but since, he has not lost one, although he has frequently had to administer our good mothers' favorite dish—viz: a "strong cup of tea,"—on account of their being poisoned.—E. G. B.—*Meine Farmer*.

*An effectual and easy way to stop the flowing of blood from a cut or wound.*—Take a few dry Beans, pound them up pretty fine, and apply them to the cut, and the blood will instantly stop. The cut should be covered up with this powder.

*On the use and value of Toads.*—I am acquainted with an observing farmer, who says if he finds Toads plenty in his corn field, he never has his corn much injured with the cut worm, so called. He told me that it was well worth while to bring one from a distance to place in a cabbage yard. Toads and those worms that eat off the cabbage plants at the surface of the ground in the night, are ever awake in the night seeking for food, or prowling for prey; that the toad's smell was so acute as to find and destroy the worms on their approach to the top of the ground, and thus a toad or two would rid a cabbage yard of such vermin, or insects. Now if this is so, it ought to be known; and may not farmers and gardeners be benefited by this hint? I have often thought of what I heard one observe, viz, "that a little thing was bigger than a large one;" meaning that it was often more useful. Toads are plenty this year, but have been for the two or three last years.—*Maine Farmer*.

*Singular case.*—We think there are few instances on record in which the conservative powers of life are more strongly exhibited, than in the following, which was communicated to us a few days since by the individual who witnessed the fact.

A farmer had a sow that was delivered of four or five good pigs in the spring of the year, but though there were evidently more, and her efforts were violent, all was in vain, and the owner considering her fate certain, and unwilling to kill her, left her to her fate. To his surprise she lived; was in a few days about the pen; and though for a month or two subject at times to severe efforts apparently at parturition, these at last disappeared, and she improved in flesh rapidly.

She was fatened in the fall, and did as well, and weighed as much, as any of the other sows fed with her, and no idea was entertained that any trace of the former difficulty remained. When butchered, however, our informant was present and saw taken from the vaginal canal or uterus, a mass, that on examination proved to be formed of the bones of the pigs that had been retained eight months before. Our informant counted four skulls, and there appeared the proportionate number of the harder bones present, all excepting these having of course disappeared.

In such a case as this, what would be the chance of success from what is called the 'Cesarian operation,' or a delivery of the young through the integuments of the belly? Such an operation has been successfully performed on a cow, though it would probably be fatal in far the greatest number of cases. Would not the attempt be admissible, where there was a prospect of relief in no other way?

*Sulphur for Pigs.*—There should always be a box of sulphur in every piggery, and a spoonful or two thrown occasionally into their swill. It is an excellent preventive of costiveness, mange and many other troubles to which swine are liable.

*Five Facts.*—A firm faith is the best divinity; a good life is the best philosophy; a clear conscience the best law; honesty the best policy; and temperance the best physic.

Communicated for the Southern Agriculturist.

## ***Monthly Calendar of Horticulture, &c.***

### **FOR NOVEMBER.**

**Peas.**—The first crop of peas, may be planted about the commencement of this month. It is usual to begin with the early varieties, as the Frames, Charletons and Hotspurs; we prefer however to plant at this time the Dwarf Marrowfat and Dwarf Imperial. The others will come into blossom too early, and be likely to be killed at that time, for they are most tender when in blossom. Towards the end of the month a general crop may be planted. The best early varieties, are the Double blossom Frames, Early Charletons and Bishop's Dwarf, the latter is the very best for a small garden, especially if in a city, as it does not grow more than 12 to 18 inches high. They may therefore be planted in rows 18 inches apart, and dropped so as to have one plant every 2 or 3 inches, for they branch very much and are very prolific. The others may be planted in rows 4 feet apart. These rows may either be planted single or double; if the former, let the peas occupy a space of 6 inches in width. If you have two rows, let these be about 9 inches apart, and the peas dropped nearly in a line; between each double row let there be at least 4 feet space. For successional crops, plant the Dwarf Marrowfat, Dwarf Imperial, Prussian Blue, and Knight Marrowfat. As these grow later, they will require from 6 to 8 feet between the rows. They should have bushes stuck along the rows, as soon as they are 6 inches high to support them. This should not be neglected.

**Beans.**—Any of the varieties of the *Vicia Faba* may now be planted. The varieties usually sown, are the Early Mazagon, Windsor, and Early Lisbon. Have rows made three feet asunder, and drop the beans 2 or 3 inches apart.

**Cabbages.**—You may yet transplant out Cabbages, for spring use, if you have neglected it in former months. The plant should be from European seed. You may also sow seeds, but they will require protection from the cold weather, especially when they first come up.

**Turnips.**—If you can obtain European seeds, we would advise that some be planted early this month. If they survive the winter, you will have them fine in the spring, when those from American seed are running to seed. A little straw thrown over the beds, will protect them in severe weather.

**Spinach.**—Some more Spinach may be sown should it be needed, or the first crop have failed from any cause.

**Carrots.**—If desirous of having a succession of young Carrots for soup &c. a few may still be matured. There is not however much chance of success unless the winter be mild.

**Lettuce.**—You may continue to set out Lettuce as they will yet succeed very well. For directions see former months.

**Onions and Leeks.**—If not transplanted out last month, they should not be neglected any longer. For directions see October.

**Asparagus Beds.**—Should now be attended to, the tops all cut down, a large quantity of manure spread over the beds, which should be well turned up with a fork.